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Eastern States Farmers' Exchange.

EASTERN STATES
Cooperator

JANUARY, 1944

Including

**1944 VEGETABLE SEED
CATALOG**





A bountiful harvest of *Eastern States Alderman* peas for Earle and Stanley Ellsworth of Farmington, Maine. The boys are 4-H club hard workers—sons of Harry Ellsworth, Eastern States local representative. A good garden is a fine asset for any farm family.



Your Vegetables

NEED TO BE WELL FED

BECAUSE they are used directly as human food and because they furnish important minerals and vitamins, vegetable crops have priority in receiving fertilizer. Crops in class B will get fertilizer only after reasonable diligence has been shown in getting plant food to vegetables.

Fertilizer grades especially recommended for vegetable crops in New England include 8-16-16, 8-16-8, 8-8-8 and 5-10-5. In Pennsylvania, Delaware and Maryland these grades are: 8-16-16, 6-18-6, 8-8-8, 5-20-10 and 5-15-5. In all areas 5-10-5 is the special home garden grade although farmers may use any grade they apply in normal operations. You can find specific recommendations of grades for different vegetable crops in an article beginning on page 22 of this issue.



Eastern States plants now have *cured* fertilizer on hand and they have the manpower to ship **NOW**. Under present conditions the best time to accept delivery on fertilizer is **NOW!** Then you are sure of it. You can safely store fertilizer until spring if you will keep it **DRY!** Pile it on a slatted, wooden platform several inches off the floor. Pile it loosely to permit air circulation. Store in a weather-tight building.

See your representative or warehouse about getting winter delivery of your 1944 fertilizer. If everyone gets going on fertilizer late, it may be **TOO LATE** for all!

COOPERATIVE EASTERN STATES FERTILIZER SERVICE

VEGETABLE SEED ORDER

to

EASTERN STATES FARMERS' EXCHANGE
WEST SPRINGFIELD, MASSACHUSETTS



SEND PAYMENT WITH ORDER TO AVOID C.O.D. CHARGES

FOR OFFICE USE

Date of Order _____

Paid _____ ☐

Name _____

C.O.D. _____ ☐

RFD or Street _____

Add to Draft _____ ☐

Post-Office _____ State _____

Paid at Whse. _____ ☐

Express or
Freight Office _____ State _____

Whse. to Collect _____ ☐

Order only varieties and sizes as listed in catalogue.

This order form will be returned to you when your order is shipped. If you have occasion to write about this order, you must return this form with your letter.

This order is given and accepted in accordance with conditions printed on the back hereof.

✓	Quantity	Column 1			✓	Quantity	Column 2		
		Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value			Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value
		ASPARAGUS SEED				Brought forward from Column 1			
		BEAN					CARROT		
							CELERY		
							CHARD		
							CORN - SWEET		
		BEET							
		BROCCOLI							
		CABBAGE							
							CUCUMBER		
		CAULIFLOWER							
Total of Column 1					Total of Columns 1 and 2				

		Column 3					Column 4		
✓	Quantity	Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value	✓	Quantity	Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value
	Brought forward from Column 2					Brought forward from Column 3			
		EGGPLANT					PEPPER		
		ENDIVE							
							PUMPKIN		
		KALE							
							RADISH		
		LETTUCE							
							RUTABAGA		
		MUSKMELON					SALSIFY		
							SPINACH		
		WATERMELON							
		ONION					SQUASH		
		PARSLEY							
		PARSNIP					TOMATO		
		PEA							
							TURNIP		
	Total of Columns 1, 2 and 3					Total of entire order			

CONDITIONS.

This order is subject to acceptance by the West Springfield office of the Eastern States Farmers' Exchange and after such acceptance is further subject to cancellation or prorating by the Exchange in event of seed crop failures, strikes, fires, embargoes or other contingencies beyond the control of the Exchange. It is further subject to change by the buyer in event of necessary change in his cropping plans upon presentation of satisfactory explanation in writing to the Exchange office in West Springfield and if desired kinds are available.

The member agrees that shipment will be made and accepted under the following condition:

The Eastern States Farmers' Exchange has exercised all reasonable care and precautions in the production, preparation and distribution of this seed, but cannot be responsible for the operation of Nature's laws, nor control the conditions under which it is later stored, handled, planted or grown; so therefore gives no warranty express or implied concerning the description, quality, productiveness or condition of the resulting crop and shall in no case be liable for an amount greater than the amount actually paid for the seed. Statements of germination, description and other information are given as a report of our tests, observations and advice.

Orders cannot be accepted or filled on any other terms.

Send payment with order and avoid C.O.D. Charges

ASSEMBLED BY _____

CHECKED BY _____

DATE SHIPPED _____

CONFIRMATION WILL NOT BE ISSUED. THIS ORIGINAL ORDER WILL BE RETURNED TO YOU.

EASTERN STATES *Cooperator*

VOLUME 20

NUMBER 1

JANUARY 1944

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The *Eastern States Cooperator* is published at Concord, New Hampshire, the first of each month by the Eastern States Farmers' Exchange. Editorial offices are at 95 Elm Street, West Springfield, Massachusetts. The Exchange is a cooperative purchasing association incorporated under the laws of Massachusetts. It has no dues or membership fees; any farmer making a purchase through the organization automatically becomes a member. The subscribers to the *Eastern States Cooperator* are chiefly the members of the Exchange — the magazine being a part of the services of the organization in which they participate cooperatively. Others wanting this magazine, but not receiving it in connection with the Exchange's business, may receive it at a subscription of \$1 a year.

Address: EASTERN STATES COOPERATOR
West Springfield, Massachusetts

The Cover...

PLEASANT memories of a past gardening season spur us to make plans for a new one. In thousands of homes this Vegetable Catalogue issue of EASTERN STATES COOPERATOR will bring the whole family together around the kitchen table some evening soon to plan and order seed for an even better garden in 1944. Women have long been the "spark plugs" of good gardening and food preservation. Our cover photo shows Miss Jean Adams of Northampton working on the Massachusetts State College farm. She is a student at Smith College, Northampton.

USEFUL INFORMATION IS A VALUABLE COOPERATIVE SERVICE

Reminders...

☐ SPRAYS — DUSTS: Have you placed an order for the *Eastern States Spray and Dust Materials* you will be needing next spring and summer?.....

☐ CHICK FEEDERS: Sanitation, feed conservation and labor saving are possible with Eastern States Cardboard Chick Feeders and the season to use them is near.....

☐ RECIPES: A brand new Eastern States book called "Food, As We Like It" is now ready for you and makes an excellent gift at only 50 cents a copy..

☐ COMMODITIES: We have a brand new book listing all Eastern States commodities. Newly designed. Your copy is ready — without charge.....

Suggestion...

WE SUGGEST to any farm families who are earmarking money for "after the war" projects that they put some in an account labeled "quick frozen foods." Great strides have been made in that field and it offers great opportunity to farm families to save money on food and also to eat all year food which has "direct from the garden" taste and be unimpaired in quality.

VEGETABLE PLANTING GUIDE

For Direct Field Seeding

Kind of Vegetable	Seeds Per Oz.	Seed Needed For 100 ft.	Seed Needed Per Acre	Packet Will Grow	Field Planting Date	Inches Between Rows	Inches Between Plants	Inches Deep to Plant Seed
Asparagus Seed.....	1250	½ oz.	5 lbs.		4/1-5/15	20-24	4	1
Beans — Bush Snap.....	60-75	8 oz.	60-80 lbs.	50'	5/1-7/15	30-36	3-4	1
Beans — Pole Snap.....	60-75	4 oz.	15-20 lbs.	75'	5/15-7/1	48	48 H.	1-1½
Beans — Bush Lima.....	30	1 lb.	100 lbs.	50'	5/15-6/15	36-40	4	1-1½
Beans — Pole Lima.....	30	8 oz.	50 lbs.	70'	5/15-6/1	48	48 H.	1-1½
Beans — Bush Shell and Soy.....	50-75	8 oz.	60-90 lbs.	40'	5/15-6/1	30-36	3-4	1-1½
Beets.....	1500	1 oz.	10 lbs.	25'	4/15-8/1	12-18	2-3	½
Chinese Cabbage.....	8000	1/8 oz.	4 oz.	90'	7/1 -8/1	24	15	½
Carrot.....	27000	¼ oz.	2-3 lbs.	100'	4/15-8/1	12-15	2	¼
Chard.....	1100	½ oz.	4-5 lbs.	50'	5/1 -6/1	24	6	½
Corn — Sweet.....	125	2 oz.	12-15 lbs.	150'	5/1 -6/20	30-36	10-14	1
Corn — Pop.....	200	1½ oz.	8-10 lbs.		5/1 -6/1	30-36	10-14	1
Cucumber.....	1000	½ oz.	2-3 lbs.	50 H.	5/15-6/15	60	48 H.	1½
Dandelion.....	35000	¼ oz.	2-3 lbs.		8/1 -9/1	18-24	6-10	¼
Endive.....	15000	¼ oz.	2-3 lbs.	100'	4/15-8/1	18-24	12	½
Kale.....	7500	¼ oz.	2-3 lbs.	100'	7/15-8/1	18-24	18	½
Kohlrabi.....	8000	½ oz.	4-5 lbs.		4/15-8/15	18-24	5	½
Lettuce — Leaf.....	16000	¼ oz.	2-3 lbs.	100'	4/10-7/15	12-15	8-10	¼
Lettuce — Head.....	16000	¼ oz.	1-2 lbs.	50'	4/10-5/1	15-18	12-15	¼
Muskmelon.....	1000	½ oz.	2-3 lbs.	50 H.	5/15-6/15	60-70	60-70 H.	1
Watermelon.....	200	½ oz.	2-3 lbs.	10 H.	5/15-6/1	96	60-70 H.	1
Onion.....	12000	½ oz.	4-5 lbs.	100'	4/10-5/1	18-24	3-4	½
Parsley.....	17000	½ oz.	3-4 lbs.	25'	4/10-9/1	12-15	8-10	¼
Parsnip.....	5600	½ oz.	4-5 lbs.	50'	4/10-5/1	15-18	4-6	½
Pea.....	90	1 lb.	90-150 lbs.	50'	4/1 -5/1	30-40	2-3	1
Pumpkin.....	100	½ oz.	4 lbs.	10 H.	5/15-6/1	96	60-70 H.	1
Radish.....	3500	1 oz.	12 lbs.	25'	4/1 -9/1	12	1	½
Rutabaga.....	10000	¼ oz.	2 lbs.	50'	6/15-7/10	18-24	6-8	½
Salsify.....	4500	½ oz.	7-8 lbs.	50'	4/15-5/15	18-24	3	½
Spinach.....	3000	1 oz.	8-12 lbs.	100'	4/1 -9/15	14-18	2-4	½
Spinach — New Zealand.....	350	½ oz.	3 lbs.	60'	5/1 -6/1	48	36	1
Squash — Summer.....	300	½ oz.	3-4 lbs.	15 H.	5/15-6/15	48	36 H.	1
Squash — Winter.....	125	1 oz.	4 lbs.	6 H.	5/25-6/10	96	60-70 H.	1
Tomato.....	7500	1/20 oz.	4 oz.	200'	5/15-6/1	36-48	24-36	½
Turnip.....	10000	½ oz.	2-4 lbs.	100'	4/1 -8/1	12-18	4-6	½

H — Hills

For Transplanting

Kind of Vegetable	Seeds Per Oz.	Plants from 1 Oz.	Plants from 1 Packet	Plants Needed Per Acre	Date to Sow Seed	Field Planting Date	Inches Between Rows	Inches Between Plants
Asparagus Roots.....	1250	800	400	5800	4/1 -5/15	4/1 -5/1	60	18
Broccoli — Early.....	10000	5000	600	7200	2/15-3/15	4/1 -5/1	36	24
Broccoli — Late.....	10000	4000	500	7200	6/10-6/20	7/15-7/25	36	24
Brussels Sprouts.....	7000	3000		7200	5/15-6/1	7/1 -7/10	36	24
Cabbage — Early.....	8000	3500	350	15000	2/15-3/15	4/1 -5/1	24	15-18
Cabbage — Late.....	8000	2000	200	7000	4/25-5/10	6/1 -6/15	30-36	24
Cauliflower — Early.....	10000	5000	250	12000	2/25-3/25	4/10-5/1	30	18
Cauliflower — Late.....	10000	3000	150	9000	5/10-6/20	7/15-7/25	30-36	24
Celery — Early.....	75000	15000	1500	40000	2/15-3/10	5/1 -5/15	24-48	4-6
Celery — Late.....	75000	10000	1000	35000	5/10-5/25	7/1 -7/15	30-48	4-6
Eggplant.....	5000	2000	250	7000	3/10-3/25	5/20-6/10	36-40	24-30
Lettuce — Leaf.....	16000	4000	1000	60000	2/15-2/25	4/1 on	12	8-10
Lettuce — Head.....	16000	4000	500	30000	2/15-2/25	4/1 -5/1	15-18	12-15
Muskmelon.....	1200	800	200	1500	4/15-4/25	6/1 -6/25	60-70	60-70
Pepper.....	4000	2000	250	10000	3/15-3/25	5/20-6/10	30	20
Tomato.....	7500	3000	300	4000	3/1 -3/25	5/15-6/10	36-48	24-40
Watermelon.....	200	150	35	1100	4/15-4/25	6/1 -6/15	96	60-70

Basis of Merit in EASTERN STATES Vegetable Seeds

GOOD SEED is the first fundamental of successful gardening. The most careful grower cannot succeed with poor seed even though he gives close attention to all the other factors of production. The ability of seed to produce a satisfactory and desirable crop cannot be determined by the appearance of the seed. It is for this reason that the *selective cooperative* service of the Exchange is of real assistance to vegetable growers whether they operate in their back yards or on a market gardening basis. *Eastern States seed* is seed of known performance. The parentage and past performance of a seed stock are the indexes the Exchange relies on in appraising future crop producing power.

☆ **Selection:** To make this program effective, the Plant Industry Project of the Exchange, through extensive trials at Feeding Hills, Massachusetts, and at other points in vegetable areas, tests seed stocks for distribution.

Every lot of vegetable seed distributed by the Exchange is included in these trials. Adaptation, trueness to type, productivity, and resistance to or freedom from disease are carefully studied. Varieties or strains must prove their worth before they are made available to Eastern States members.

☆ **Breeding:** In conjunction with the trial work, plant breeding work is also constantly in progress for the

improvement of present varieties and the creation of new and better ones. The purpose of all this careful work is to determine and make available the best "consumer values" in seed. This *value* is measured in terms of *dependable performance* in the field, in the markets, and on the consumer's table.

☆ **Production:** The seed for distribution is procured by multiplying our own foundation stock seed and by purchases from sources of proven merit. The area of production is selected for its ability to produce economically high quality seed, as free as possible from disease.

☆ **Seed Treatment:** Certain diseases are carried on or in the seed and can be controlled by specific treatments. Seed for which an effective treatment has been demonstrated is so treated at the seed warehouse before shipment, where the chemicals can be properly and economically applied.

Seed so treated should not be soaked before planting, as germination may be materially injured.

☆ **Description:** Every lot of seed distributed will show a report of the germination, the date of test and a lot number. The lot number is a code reference to our records of the history, performance and production of that particular lot. Correspondence pertaining to the performance of *Eastern States seed* should include the specific lot number of the seed under consideration to aid investigation.

Save the package or the tag on your Eastern States vegetable seed. Refer to the lot number when you write for further information.

For the sake of uniformity in describing the comparative earliness, size, and other characteristics of varieties, several years' records from the Eastern States testing grounds at Feeding Hills, Massachusetts, have been used.

"Days to grow" indicates the relative earliness of varieties from seed to crop, and for kinds ordinarily transplanted, from field setting to market crop.

The number of days required by any particular variety to produce a crop will vary from place to place and from year to year, depending upon soil and seasonal conditions. Also characters of growth will vary. For instance, a particular variety of corn will normally grow a taller stalk the farther north it is grown and a shorter stalk the farther south it is grown.

☆ **Never be rough** with seed. The careful handling of certain vegetable seeds in every handling operation is exceedingly important to assure successful stands in the field. The Eastern States Farmers' Exchange has exercised every possible precaution in the harvesting, cleaning and shipping of such seed, fully realizing the extreme danger to germination from rough handling.

This precaution applies particularly to the larger seeds such as peas and beans which have paired cotyledons with dry, brittle embryos. Dropping a bag or walking on one may reduce germination of its contents as much as 10 percent or more by cracking the seed internally, yet you may see little or no evidence of physical damage.

Likewise, the seed of beets and chard will crumble very readily. This injury breaks up the seed clusters and increases the loose hull accumulation which interferes with uniform seeding.

Description of Eastern States Vegetable Varieties and Brief Cultural Suggestions

ASPARAGUS

Mary Washington — (Available as seed only). A rust-resistant variety developed by the USDA. Spears are large, thick, green with a purple tinge, oval in cross section and of excellent quality, even when large. The tip scales remain tightly closed permitting the growth of tall green spears before feathering. The outstanding variety for home garden or commercial planting.



M. L. Brown and Son, market gardeners of West Springfield, Massachusetts, offer attractive products grown from Eastern States seed.

BEANS

BUSH GREEN SNAP

Stringless Valentine — An improved form of Black Valentine that is stringless. The pods are oval in cross section, dark green, nearly straight and of fine quality. The pods hold their color and texture well for distant shipment. The plant is large, erect and prolific. Black seed.

Bountiful — The plant is large, erect and prolific. The pods are flat, light green, slightly curved, brittle, stringless, slightly fibrous, but remain edible till fully grown. It is a good shipper. Seed yellow straw color.

Stringless Green Pod — The plants are erect, vigorous and mature with considerable uniformity. The pods are dark green, round in cross section, practically straight and smooth. The flesh is brittle, absolutely stringless and without fiber or parchment. Seed solid yellowish-brown.

Stringless Tendergreen — The plant is large, erect and compact, producing heavily

over a short season. The pods are dark green, nearly round, slightly curved, and smooth. The flesh is brittle, stringless and without fiber. Seed brown, blotched with light fawn.

BUSH WAX SNAP

Pencil Pod Wax — The plant is large and very productive over a long period. The pods are curved and fleshy without strings. The flesh is golden yellow and of the highest quality. It is one of the most dependable wax beans. Black seed.

Brittle Wax — The plant is large, erect and moderately productive over a long period. The pods are slightly curved, brittle and succulent, without string, fiber, or parchment. Used extensively for canning, as the seed is light-colored and develops slowly. White seed with very dark brown to black broken-ring eye marking.

Sure Crop Wax — Large, vigorous, spreading plant, productive over a long period. The pods are dull yellow, flat but fleshy, brittle, stringless and with very little fiber. Black seed.

Bean Culture — Bush Wax and Green Snap — French's Horticultural

Plant after danger of frost in a fertile, well-drained, mellow soil, 1" deep, 4" apart in 2½ to 3' rows, using ½ lb. of seed to 100' of row (60 to 80 lbs. per acre). For continuous harvest, plant every 2 or 3 weeks to July 1 or later depending on locality, allowing sufficient time for maturity before frost.

Seed must not be placed in contact with fertilizer. Burning will result.

BUSH SHELL OR FIELD

French's Horticultural — The plant is erect with short runners and very prolific. As a shell bean the pods are heavily splashed with deep carmine with large plump seeds. This variety is also used as a dry field bean. Seed pinkish-buff splashed with deep carmine.

Maine Yellow Eye — A high quality baking bean, popular in New England. The plant is of the short runner type. The beans are medium size, solid white with brownish-ochre markings around the eye, covering about ¼ of the bean. Matures uniformly, dropping its leaves at maturity, making them easy to cure in small loose ricks.

Lapin Marrow — Similar to White Marrow Fat but seed is smaller, resembling a large Navy bean. It is especially high quality and has a distinctive flavor when baked. Plant is large, dark green, free of runners, with large drooping leaves and highly productive. Requires about 90 days from seeding to harvest.

Geneva Red Kidney — A disease-resistant productive variety. The dry beans are used for baking and are of excellent quality, dry and mealy. Seed reddish-brown in color and kidney-shaped.

Bean Culture — Bush Shell or Field

Plant after danger of frost in a fertile, well-drained, mellow soil, 1" deep, 4" apart in 2 to 3' rows, using ½ lb. of seed per 100' row (60 to 90 lbs. per acre).

Seed must not be placed in contact with fertilizer. Burning will result.

BUSH LIMA

Fordhook — The plant is large, upright, vigorous and very productive. Pods contain three to four large, plump seeds of the potato lima type. Dry beans are white with a tinge of green.

Bean Culture — Bush Lima

Plant after danger of frost in a warm, fertile, well-drained, mellow soil, 1" deep, 4" apart in 3 to 3½' rows, using 1 lb. of seed per 100' row (95 to 110 lbs. per acre).

Encourage quick germination and rapid seedling emergence by shallow planting in a warm, well-drained soil to overcome rhizoctonia and other soil-borne organisms frequently responsible for a poor stand.

Seed must not be placed in contact with fertilizer. Burning will result.

POLE LIMA

King of Garden — The plant is tall, a good climber, vigorous and highly productive over a long period. Pods contain four to five beans. Seeds are large, flat, white, fleshy and of excellent quality.

POLE SNAP

Kentucky Wonder — Has a distinctive beany flavor of high quality. The pods are fleshy but not attractive, because they are irregularly curved with constrictions between the seed. Seed buff-brown with indistinct vein pattern of darker shade.

Bean Culture — Pole Lima and Pole Snap

Plant after danger of frost in a warm, fertile, well-drained, mellow soil, dropping 3 to 5 seeds $1\frac{1}{2}$ " deep per hill, 4 x 4' apart. Use 8 to 9' poles set 2 to 3' in the ground and well-braced. Where seed is dropped 4" apart in 4 to 5' rows, a trellis may be built with well-braced end poles and intermediate supporting poles every 12 to 16' apart. Stretch top, middle and bottom horizontal wires and attach vertical strings such as binder twine every 8" to 12" apart.

Encourage quick germination and rapid seedling emergence by a shallow planting in a warm, well-drained soil to overcome rhizoctonia and other soil-borne organisms which are frequently responsible for a poor stand.

Seed must not be placed in contact with fertilizer. Burning will result.

SOYBEAN

The soybean is one of the most nutritious and healthful of all foods. It is high in protein, fat, several vitamins, and a wide variety of amino acids. It is relatively low in starch and sugar, of which most diets contain too great a proportion. It therefore definitely improves the ordinary diet. It has been a substantial part of the diet in Oriental countries for hundreds of years but has until recently been grown only for animal feeding in America. The flavor and texture is unlike other kinds of beans with which the Occidental palate is familiar; so from among the hundreds of varieties available those most palatable to us must be chosen.

Varieties

Giant Green — A large green-seeded variety of relatively early maturity. When planted June 1 the beans should be ready to eat green in about 90 days or about September 1, and ready to thresh as dry beans 15 to 18 days later. The plants grow erect 18 to 24" high with large leaves and rather coarse, woody stems. As they near maturity the pods become grayish-yellow and then black at complete maturity, each containing 2 or 3 green beans which shatter out readily. The beans can be used either green or dry but flavor and quality are generally considered better in the green shell stage. Yield is good but usually not as heavy as with longer season variety.

Bansei — A medium-size, yellow-seeded variety requiring about 105 days to reach green edible maturity and 18 to 20 days more for complete maturity as dry beans. The plants grow about 24 inches tall, and are stiff and erect. The pods are borne profusely along the stem and usually each contains three seeds. They are quite resistant to shattering and can be left in the field until convenient to thresh. A good yielder.

Willomi — A large, yellow-seeded variety requiring about 105 days to reach green edible maturity and 18 to 20 days more for complete maturity as dry beans. The plants grow 24 to 30 inches high and somewhat sprawling. The

leaves are medium size and yellowish-green. The pods are borne profusely along the stem and usually each contains three plump seeds which shatter readily when mature so must be harvested promptly. Yield heavily green or dry.

Aoda — A large, green-seeded variety requiring about 120 days to reach green edible maturity and 20 to 25 days more for complete maturity as dry beans. Seeds are green throughout. The plants grow 30 to 36 inches tall, and are strong and vigorous. The pods are borne profusely along the stem and usually each contains three seeds. Because of the long season required this variety should not be used in New England except along Long Island Sound, but is well adapted to the longer growing season of Delaware, Maryland and southeastern Pennsylvania.

Cultural Suggestions

Plant about June 1 and after soil is well warmed, about one inch deep and three inches apart in 2' rows. Proper inoculation is desirable for soybeans but when impractical to apply on small lots they will make entirely satisfactory growth if nitrogen is supplied in a regular garden fertilizer at the same rate as for other garden crops.

Rabbits are extremely fond of soybean foliage and if any rabbits are in the neighborhood, the soybeans should be protected by a fence.

Harvest as a green vegetable when the beans are well formed but the pods are still green. For shell beans allow pods to ripen and become at least partially dry on the standing stalk.

are rather nut-like in texture and not "mushy" like navy beans.

To get best color, volume and flavor, soak in clear water overnight. Drain and cook in salted water for 75 minutes.

Baked Beans — Soybeans may be baked the same as navy beans, boiling as suggested above and baking slowly for three or four hours.

Roasted Soybeans — Soak 2 cupfuls of dried beans for about 12 hours in one quart of water to which has been added one heaping teaspoonful of salt. Cook just below the boiling point for one-half hour in the water in which they soaked; then roast in oven or corn popper to a light brown color.

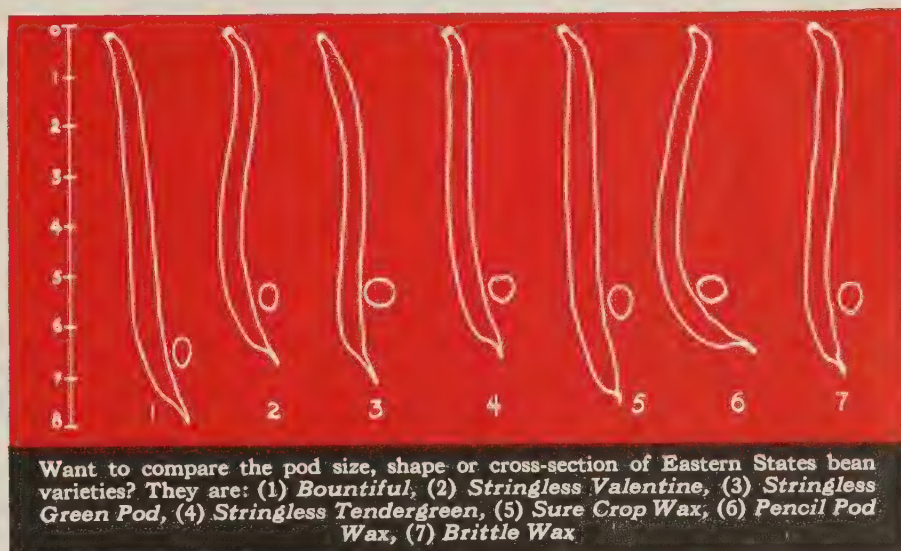
Other Uses — Soybeans can also be used for puree of soup, croquettes, soybean chili, salads and many other tasty, nutritious dishes.

BEETS

TABLE

Crosby Early Wonder — Roots are semi-globular, with a small tap root. The flesh is blood red with zones of slightly lighter shade. The tops are dark green tinged with red, of medium height, and erect.

Detroit — The root is globe-shaped with dark red flesh, and the zones of slightly lighter color are indistinct. The tops are dark green tinged with red. A high quality beet for market, canning, or storage.



Uses and Methods of Preparation

Green Beans — Cook green beans immediately after being harvested. The fibrous pod cannot be eaten but the green beans can be either cooked in the pod and shelled later or they can be shelled and then cooked. To facilitate shelling, blanch the pods in boiling water for five minutes, drain and cool with cold water sufficiently to be handled. Cook the shelled beans in a small amount of salted water for 10 minutes after boiling starts.

Boiled Beans — Dry soybeans swell and cook to a tender condition even more readily than do other kinds of beans, but when they have reached the maximum degree of softness,

Beet Culture — Table Beets

One ounce of seed plants 100' of row — 10 lbs. per acre. Sow as early as a fertile, well-drained, mellow soil can be prepared, dropping seeds $\frac{1}{2}$ " apart, $\frac{1}{2}$ " deep in 12" to 18" rows. Thin seedlings to stand $1\frac{1}{2}$ " to 3" apart and use thinnings as greens. For continuous harvest, plant every 2 to 3 weeks to August 1.

BROCCOLI

Calabrese — This vegetable should be much more widely used in home gardens. The edible heads are very high in vitamins A, C and

G. A dozen plants set early in the spring will yield sufficient of this popular delicacy for a family of four until freezing in the fall. After the central green head is removed, a number of smaller heads are produced on stems 4 or 5" long, continuing to produce in this manner throughout the summer if kept cut and adequately fertilized; or seed may be sown in June or plants set in late July for harvest in September and October. Plants grow 3 to 4' in height and become much branched.

Broccoli is prepared for the table similarly to asparagus or cauliflower, cooking only until tender (3 to 5 minutes), thereby retaining the bright green color, full flavor and high food value.

Broccoli Culture

For an early crop, sow in sterilized soil under glass (8 to 10 seeds per inch in 2" rows) from February 15 to March 15. Transplant into 2½" pots or 2½" x 2½" apart in flats when first true leaves appear. After danger of hard frosts, the plants should be hardened by gradual exposure and set outside 2 by 3' apart in a fertile, well-drained, mellow soil. For a late crop, sow in June outdoors, transplant in 5 to 6 weeks or thin to stand 2 x 3' apart. Side-dressings of nitrogen may be advisable during the season.

Marion Market — A yellows resistant variety of Copenhagen Market type, in season with late strains of Copenhagen. Plants large, leafy, producing oval heads weighing 5-7 lbs. Useful as a midseason variety.

Cabbage Culture — Smooth Green: Early and Midseason Varieties

One-quarter ounce of seed plants 100' of row — 4 ozs. per acre. For early harvest, sow in flats under glass (8 to 10 seeds per inch in 2" rows) from February 15 to March 15. Transplant once in flats 2" by 2" when first true leaves appear. Avoid crowding, drying out or overwatering. Control temperatures at about 65° F. and provide ample ventilation. Harden off by gradual exposure and withhold watering a week or 10 days before setting in the field. Soak thoroughly just before transplanting. Set outside 14" to 18" by 24" apart as soon as ground can be prepared after danger of hard frosts. When transplanting, the field soil should be slightly richer than the soil in which the seedling plants were grown. For later harvest, sow at 2-week intervals, 5 to 6 weeks before transplanting in the field. Side-dressings of nitrogen may be profitable if growth is slow.

Yellows Resistant Wisconsin No. 8 — A strain of Ballhead type selected for resistance to cabbage yellows. It is a leafy, medium stem type, producing globe-shaped heads. A late variety for winter storage. Use standard varieties unless the soil is known to be infected with cabbage yellows.

Drumhead Savoy — The plants are medium large, producing deep rounded heads, and moderately solid. This variety is admired for its crumpled, dark bluish-green leaves and creamy white interior. The flavor and quality are distinctive and it stores well.

Cabbage Culture — Late Varieties

Sow in outdoor seedbed, 4 seeds per inch in 12" rows in April or May. One ounce of seed plants 200' of row and should produce in excess of 2000 good plants — enough for one-fourth acre. Transplant 5 or 6 weeks later, 24" x 30" to 36" apart. The field soil should be somewhat more fertile than the seedbed.

CHINESE or CELERY CABBAGE

This vegetable makes a splendid addition to the late fall garden. Its flavor is somewhat like that of cabbage but much milder and more delicate. It can be eaten either raw or cooked in nearly any of the ways practiced for cabbage or lettuce. It is delicious when eaten as slaw or salad. The leaves may be cooked as cabbage or like spinach or the mid-rib alone used and served more like asparagus.

About 25' of row is suggested for a family of four.

Chibli — The outstanding variety. It is tall and sure-heading. The outer dark green leaves enclose a long, 18" tapering head which when mature is very compact, white, tinted with green, crisp and sweet.

Chinese Cabbage Culture

Grown chiefly as a fall crop, for if grown in summer, the plant will likely go to seed before heading. Sow seed in July in 18" to 24" rows. Use ⅓ oz. per 100' of row or 4 oz. per acre. When plants are not over 2" high thin to about 15". Soil must be fertile. If plants are started in a seedbed, transplant when quite small — about 4 weeks after the seed is sown.

A rich soil that is retentive of moisture and in good physical condition is necessary; side-dressing of nitrogen may be necessary if growth is slow.

CARROTS

Chantenay (Red Cored) — A red-cored variety, productive and of good quality. Roots are 5½" long and 2-2½" in diameter at the crown, tapering to 1-1½" with a blunt bottom which tapers to a decided rat tail. The crown is small and slightly sunken. Generally used as an early bunching carrot.

Nantes Long — A rapid-growing variety practically coreless and of the highest quality flavor and texture. The root is 6½" to 7" long and 1" to 1½" in diameter, cylindrical and distinctly stump-rooted. The tops are small and must be handled carefully to avoid breaking.

Imperator — Roots are 7-8½" long, 1½-2" at shoulder and uniformly tapered to a semi-blunt end. The flesh is a rich orange color,



A head of *Golden Acre* that would please the king's taste.

CABBAGE

EARLY VARIETIES

Golden Acre — An early uniform strain of Copenhagen Market. Plants are compact and of medium size. Heads are slightly flattened, solid, globe-shaped and of excellent quality. This variety is suitable for successive plantings to midsummer.

LATE VARIETIES

Penn State Ballhead — A very desirable high-yielding variety developed by Dr. C. E. Myers of the Pennsylvania State College. Plants are of medium size with short stems. The heads are flattened, globe-shaped and very solid. A good variety for kraut or winter storage. Seed available this year is reproduced stock seed and did not come direct from Pennsylvania State College. It may show some variation in type.

fine grained, tender and of excellent color and the core is indistinct. The tops are of medium size and strong. Suitable for bunching or storage. Partially resistant to Cercospora leaf spot. Definitely coarser, but more sure of a satisfactory crop than Bunching.

Bunching — A carrot well adapted for bunching for long distance shipping. The roots are 8" long and 1¼-1½" in diameter, nearly cylindrical with rounded shoulders and stump-rooted. The root is smooth and nearly free from hair roots and side root scars. The tops are short but strong. Well grown on good soils, this variety suits quality markets. Susceptible to Cercospora leaf spot.

Danvers Red Cored — A half long, late variety of exceptional quality adapted to fall use or winter storage. Roots are 7-7½" long and somewhat stump-rooted. The crown is full, 2-2½" in diameter. Flesh is bright orange-scarlet. Tops are medium large.

Hutchinson — A late, heavy yielding variety, good for fall use and winter storage, having a cylindrical root 10 inches to 14 inches in length, 1 to 2 inches in diameter, with principally an abrupt stump end. Flesh is deep orange, tender and of good quality when properly grown in a deep, light soil, well supplied with moisture. Roots should not stand more than 1 to 1½" apart to avoid over-size, coarse growth. Tops are of medium size, strong and vigorous. About 80 to 90 days are required from seeding to bunching size, although this variety is generally sold as a box or trimmed carrot.

Carrot Culture

Sow after April 15, and for continuous harvest, successively every 3 weeks until July 15 in a deeply-loosened, well-prepared seedbed.

Sow ¼ oz. of seed per 100' of row or 2 to 4 lbs. per acre, ¼ inch deep in rows 12" to 15" apart. Thin seedlings to stand 1-2" apart.

CAULIFLOWER

Super Snowball — A deep-headed strain that is more spreading than usual and gives better protection to the head, but requires tying. Best suited for early season planting for a crop in late June to early September. Ready for harvest about 65 days after transplanting. Heads usually 6-7" in diameter, rather spongy and will wither if held long after cutting. It should not be used to compete with later, more solid varieties in late fall.

Danish Early — A sure-heading strain of Snowball variety suitable for a main crop in the fall maturing about 75 days after transplanting. Plant is small and compact. Heads are well protected but require tying.

Holland Erfurt — Acceptable seed not available.

Cauliflower Culture

For an early crop, sow inside from February 15 to March 15. Harden off and set outside as soon as ground can be prepared after danger of hard frosts.

For late harvest, sow the seed about the middle of May, transplant into the field about July 1. As soon as heads begin to form, draw the leaves over and tie them together for protection

against sun and rain and to afford perfect bleaching conditions. Cut heads while the white curd is compact and solid. Trim outer leaves to extend slightly beyond the curd for protection in handling and shipping. Side-dressings of nitrogen may be necessary if growth is slow. Set plants 20" by 3' apart.

Hollow stalks and browning of the curd, with or without an unthrifty condition of the plants, may indicate boron deficiency in the soil. If such conditions are found, consult your county agent or the Eastern States Farmers' Exchange fertilizer department for recommended treatment.

CELERY

Tall Fordhook (Summer Pascal) — A tall, early strain of Fordhook. Plants are large, stocky, and erect. Stalks are 8 to 9 inches to the first joint, smooth, meaty, full heart, blanching with paper or cuffs to a light cream color. Not quite as brittle as Fordhook Emperor. Ready for harvest in 105 to 110 days from field setting.

Fordhook Emperor (Houser) — A strain of Fordhook with very high table quality but extremely brittle, so must be handled carefully in packing and shipping to avoid cracking and breaking. Stalks are 6 to 7" long, very thick, smooth and meaty. Blanches slowly with paper or cuffs to a pale cream color. Ready for harvest about 120 days from field setting.

soil should be deep and thoroughly prepared, and, if necessary, make side-dressings of available nitrogen fertilizer. When celery is fully grown, blanch with boards, earth or paper.

CHARD

Chard is a member of the same family as beets but has been developed for its foliage rather than for an enlarged root. It is most used as greens but the mid-ribs may also be cooked as asparagus or creamed celery. It ranks high among vegetables in content of vitamins, calcium and iron.

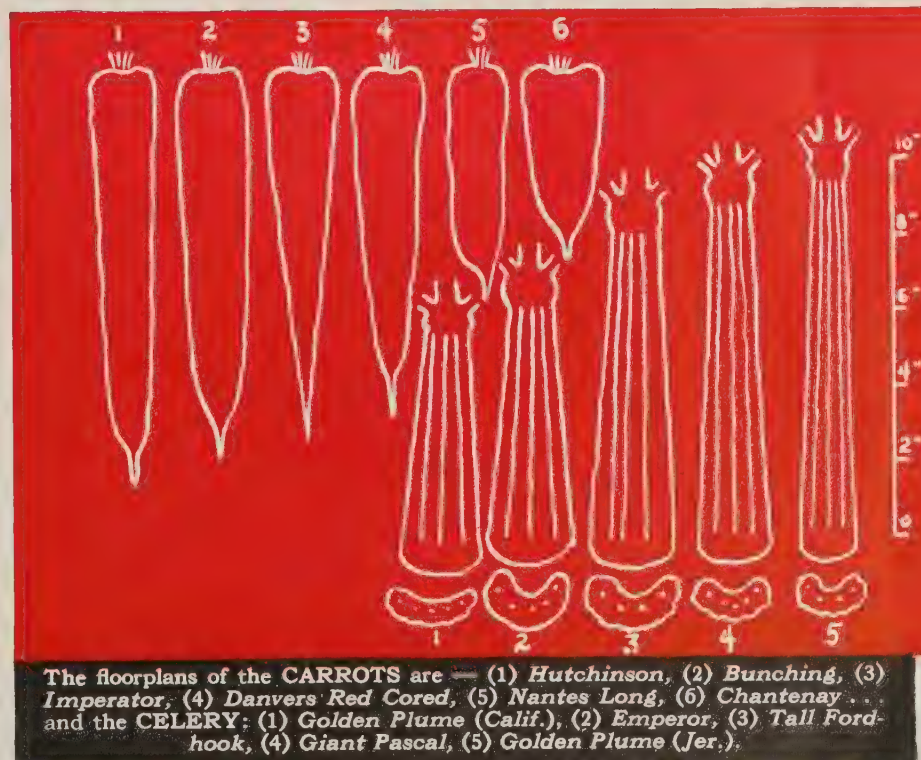
Twenty-five feet of row will supply adequately a family of 4 from early summer to freezing weather of fall.

Fordhook Giant — The heavy crumpled or savoyed leaves are dark green with a large white succulent stalk.

Lucullus — The heavily-crumpled or savoyed leaves are yellowish-green and the thick, broad succulent stalks are light green in color.

Swiss Chard Culture

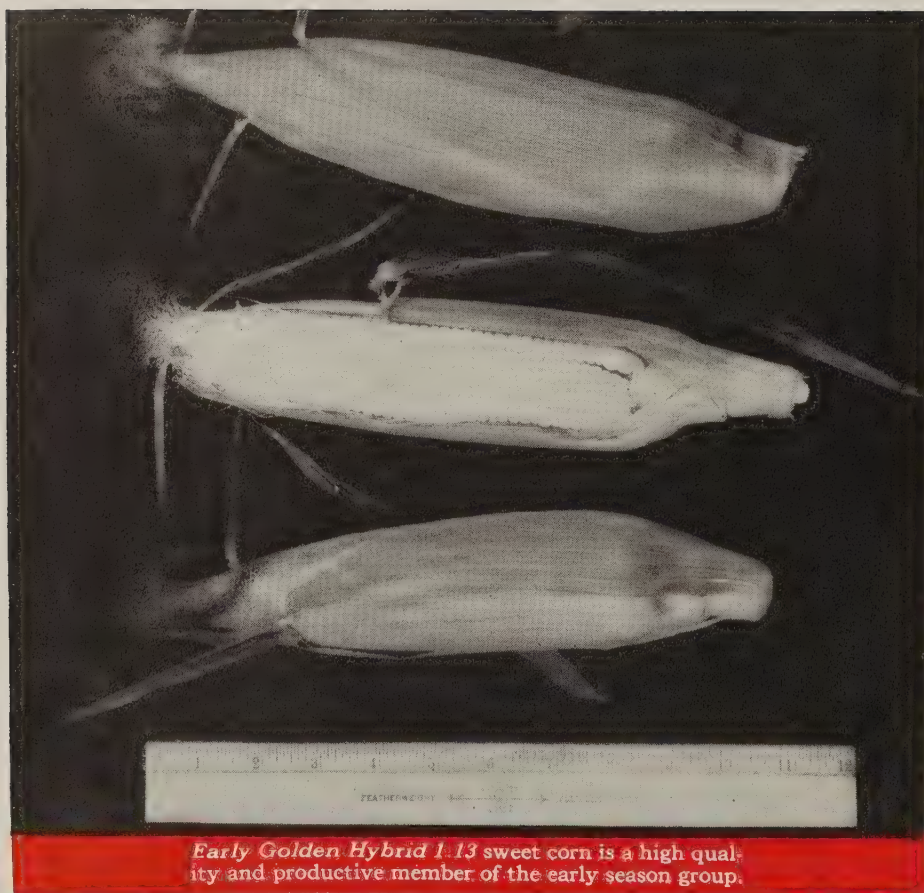
One-half ounce of seed plants 100' of row — 4 to 6 lbs. per acre. Chard is easily grown. Plants may be started in greenhouse or hotbed and then transplanted to the open field or planted directly outdoors as soon as soil can be prepared in spring. Sow 2" apart, ½" deep



Green Celery Culture

One-quarter ounce of seed plants 100' of row — 4 ozs. per acre. Sow seed outdoors about May 1 and transplant to field July 1 to 15. The

in rows 2' apart. Thin seedlings to stand 4" to 6" apart. By breaking off and using only the full-grown outside leaves, a continuous harvest may be enjoyed throughout the season.



CORN

HYBRID — MIXED YELLOW AND WHITE

Sugar and Gold — An extra early high quality sweet corn with a mixture of yellow and white kernels. It matures about 3 days ahead of Spancross 13.4 but is very susceptible to bacterial wilt so should only be grown north of Massachusetts, or for trial in western or central Pennsylvania or where bacterial wilt does not occur.

The stalk is rather slender, about 4' tall, with reddish foliage. The ear is 6-6½" long with 8 or 10 rows of tender sweet kernels, some yellow and some white. The husk is rather short and light. In areas where adapted it is a splendid corn for the first early planting in home gardens and for limited planting to supply the first few days of a market that will accept high quality in spite of mixed color kernels.

HYBRID — YELLOW

Early Golden 1.13 — A very early, distinctly high quality yellow hybrid requiring only about 79 days from planting to roasting ears. The stalk is slender but stiff and strong, averaging about 5½' tall in central Massachusetts. Several tillers are normally produced by each plant. The ear is about 7" long, 12 rows and nearly cylindrical in shape with little taper toward the tip. The husk is medium heavy. The kernels are sweet and considerably more tender than either Spancross or Marcross. It is highly resistant to bacterial wilt. Desirable for either home gardens or for early markets interested in high quality.

Spancross 13.4 — An extra early yellow hybrid requiring only about 77 days from planting to edible maturity. It is a cross between inbreds of Golden Early Market and Spanish Gold developed by the Connecticut Agricultural Experiment Station. It is resistant to bacterial wilt and is the earliest desirable variety available. Plant grows about 4' tall. Ear is 6½" long, as thick as that of Marcross 13.6, and with 12 rows of kernels of good quality for the season. It should only be used for the first planting since its quality is not high enough to compete with better later hybrids.

Marcross 13.6 — A high-yielding, early, yellow hybrid resulting from a cross of two Connecticut inbreds — 13 and 6. It reaches roasting ear stage about 82 days after planting and produces ears extra large for the season, about 8" long with 12 to 14 rows. The eating quality is fair and very acceptable on many markets. The plants grow about 5' tall and are highly resistant to bacterial wilt. It is one of the most popular and widely used of all varieties for the main early market. It is not recommended as a first choice for home gardens where higher quality varieties should be used.

Carmelcross 30.13 — This hybrid replaces 39.13 of former years. The inbred 30 is a selection by the Connecticut Experiment Station out of the inbred Purdue 39 formerly used, giving a slightly larger ear in the resulting hybrid. Otherwise the characteristics are the same. Plants are moderately leafy, growing to a height of 5½' and are highly resistant to bacterial wilt. Ears are large with 12 to 16 rows and a heavy, tough husk which covers the tips well. They reach roasting ear stage about 84 days after planting. Quality is excel-

lent. This hybrid is very desirable for either home garden or market in the midseason period.

Golden Cross Bantam — This is a hybrid from a cross of two inbreds of Golden Bantam — Purdue 51 and 39. It is the slowest maturing of all hybrids on our list requiring about 98 days from planting to roasting ears. It also has the highest quality of all standard varieties. The ears are about 8" long, cylindrical, with 12 or 14 rows and good husk cover affording considerable protection against ear worms. Plants are dark green, leafy, about 6½' tall and highly resistant to bacterial wilt. This variety should supply the main crop in every home garden and with its great uniformity in growth and maturity as well as its exceptional quality and heavy yields it is especially adapted for canning, freezing or later season market.

HYBRID — WHITE

Narrow Grain Evergreen 14.13 — This is a midseason white, wilt-resistant hybrid that matures for eating or processing 95 to 100 days after planting. Plants are 7 to 8' tall, vigorous and strong. Ears are 7 to 8" long, usually well tipped and with 16 to 18 rows of deep, white kernels of high quality.

OPEN POLLINATED — YELLOW

Golden Bantam — A standard variety with cylindrical slender ears of high quality. The plant tillers (suckers) freely. It is susceptible to bacterial wilt.

Bantam Evergreen — A high quality corn for midseason or late. A selection from a cross of Golden Bantam and Stowell's Evergreen. It has the Evergreen type of ear, with deep yellow kernels of high quality. Plants are large and vigorous.

Sweet Corn Culture

Two ozs. of seed plants 100' of row — 10 to 12 lbs. per acre. Plant after danger of hard frost, 1" deep, 8" apart in 30" to 36" rows. When planting in hills, drop 4 to 5 seeds 30" apart and thin to 3 stalks. For succession harvest, plant at weekly intervals or use preferably later maturing varieties.

CUCUMBER

PICKLING (BLACK SPINE)

Association Pickling — A highly desirable black spine pickling strain developed by the Michigan Experiment Station for the National Pickle Packers' Association. The plants are very prolific and the fruit is dark green, symmetrical and square-ended, suitable for pickling at any size.

Chicago Pickling — The most widely used variety particularly adapted for large pickles. The fruits are thick, uniform, medium-green and square-ended. The plants are very prolific.

SLICING (WHITE SPINE)

Straight 8 — An early variety producing cylindrical symmetrical smooth fruits well-rounded at the ends. When ready for use the color is deep green and the fruit is free from light tips and stripes. Highly productive.

A & C Special — A desirable market cucumber because of its uniform length, very dark green color and high productivity. The fruits

taper at both ends, but have thick flesh with a small seed core.

Cucumber Culture — Pickling and Slicing

One-half oz. of seed plants 100' of row — 2 to 3 lbs. per acre. Plant after danger of frost is over and up to the middle of June in rows 5' apart; or in hills 5 x 5', 5 seeds to a hill. Plant 1½" deep.

EGGPLANT

New Hampshire Hybrid — A distinct early type, originated by Professor J. R. Hepler of the University of New Hampshire from a cross between Early Dwarf Purple and Black Beauty and selected by him through five generations for earliness, size, and color. The plant is 20" to 24" high, spreading, with small green serrate leaves; fruit is glossy, deep purple and only slightly smaller than Black Beauty and of the same shape. It is generally reported to be two weeks or more earlier than Black Beauty and New York Improved.

This variety was entered by Professor Hepler in the 1938 All-American Trials and received a silver medal.

Black Beauty — A standard variety of eggplant 2½' to 3' tall with an equal spread. Fruits are large, egg-shaped, 6" to 8" long, dark purple and remain firm long after picking.

Eggplant Culture

Eggplant is a hot-season crop. Sow inside after March 1, one seed per inch of row — ¼ oz. per 100'. Maintain temperature of 65° to 75° F. Transplant at least once, preferably into individual containers. One ounce of seed should give 2000 plants — enough for ¼ to ⅓ acre. After May 20, when soil is thoroughly warm, transplant into the field 2' to 3' by 3' to 5'. Nearly neutral soils favor growth but diseases are usually less troublesome on more acid soils.

ENDIVE

Full Heart Batavian — A variety having broad, more or less twisted and waved leaves with thick white mid-ribs. The inner leaves form a fairly firm head which blanches to a creamy white and is crisp, tender and of fine flavor. Unsurpassed for salads.

Green Curled Ruffec — A curled or fringed-leaved variety, used principally as a late fall crop, although suitable for early spring culture. Plants are 16-18" in diameter, tufty and full in the center; the mid-rib is an inch broad, thick and tender. The heart blanches easily, is tender and of excellent quality.

Endive Culture

One-half ounce of seed plants 100' of row — 4 to 5 lbs. per acre. For an early crop, sow about April 15 and for the late crop July 1 in fertile, moist soil, ½" deep in rows 20" apart.

Thin seedlings to 12" apart. When nearly mature, the heart is blanched usually by tying outer leaves together over the center. This should be done only when the plant is quite dry. Moisture in the heart starts decay.

KALE

Blue Scotch — Bright bluish-green, finely crumpled leaf almost completely hiding the mid-rib, moderately hard, stand hard-freezes but seldom lives over a severe winter. Attains height of 20".

Blue-Green Siberian — Dull bluish-green color, coarsely crumpled with nearly flat mid-rib. Very hardy, will live over most winters.

Kale Culture

One-fourth ounce of seed plants 100' of row — 2-3 pounds per acre. Sow July 1 to 15, ½" deep in 18-24" rows. Thin seedlings to 18" apart in the row. Two or more cuttings should be secured.

LETTUCE

Black Seeded Simpson — An early loose-leaved variety that can be used in the home when very small. The plant is hardy and vigorous, doing well in midsummer. The leaves are yellow-green, slightly frilled and crumpled, forming a compact bunch at the heart, which is crisp and tender.

White Boston — A good white-seeded butterhead variety. The leaves are light green and free from brown tint. The leaves are thick, smooth, the heart is buttery yellow and of excellent quality. It is especially adapted for home gardens and near-by markets. It is earlier than the iceberg types.

New York 12 — A very important white-seeded, crisp head variety. It has dark green foliage, develops a large solid head, matures quickly and has good quality. It is being replaced somewhat by Imperial 847, which is somewhat more sure heading, although slower

growing. New York 12 should still find a place because of its rapid growth for the first early spring crop.

Imperial 44 — A strain of the "Iceberg" type developed by the USDA and found by Cornell University to be well adapted to the northeastern United States. The plant is of medium size with heads slightly flattened and very solid. Somewhat subject to tip burn. This variety apparently needs a very uniform moisture supply and probably heavy fertilization.

Imperial 847 — A lettuce of the "Iceberg" type selected by Dr. I. C. Jagger of the USDA for summer and fall production. Very sure heading. Heads somewhat flat but solid and crisp. This variety in many locations shows indications of being a more dependable cropper than New York 12, but is slower growing. Black-seeded.

Great Lakes — A most recent introduction by USDA and Michigan Experiment Station which is outstanding in its ability to head in midsummer, the seed stalks developing very slowly even under conditions of high temperature. It received the bronze medal award in the All-American new variety selections of 1943.

The outer leaves are light grass green, large with waved edges, nearly flat blade, midvein thick and somewhat coarse. The heads are large, 6 to 7" in diameter and 5 to 6" high, extremely hard and solid weighing about 2 lbs. each. The inner leaves are crisp and brittle, tightly packed and white to pale green in color.

This variety is highly resistant to tip burn and bottom rot, but some loss may occur from aster yellows, the leaf hopper carriers of which are most numerous in midsummer.

This is the most promising variety so far developed for the successful production of summer head lettuce in Eastern States territory.



Cucumbers get their "physical" inspection in trials at the Eastern States Plant Industry Project.

Lettuce Culture

Early Crop — One pound of seed produces plants for one acre. Sow in greenhouse in early February. Transplant in 2-3 weeks to flats 2" x 2". Harden off and set in field as soon as danger of hard freeze is past, 12" to 18" apart in 12" to 15" rows.

Later Crops — One-half ounce of seed plants 200' of row — 2 lbs. per acre. As early as soil can be finely fitted sow $\frac{1}{4}$ " deep in 12" to 15" rows. Thin seedlings to 12" to 18". For succession, sow at 2-week intervals to July 25. Field soil must be rich for good crop.

MELONS

MUSKMELON — SALMON FLESH

Emerald Gem — A good home and market garden variety but not a shipping melon. A two-pound globular melon slightly flattened, $4\frac{1}{2}$ " by $5\frac{1}{2}$ ", ribbed, outer color green to yellow and slightly netted. The flesh is thick, salmon-colored, sweet and the seed cavity is very small.

Honey Rock — This nearly round, medium-size, $5\frac{1}{2}$ " by 6" melon weighs 4 to 5 pounds. The skin is gray-green and is covered with a coarse netting. The flesh is thick, orange-salmon in color and has a typical musky flavor. A home and market melon but not for long shipment.

Hale's Best 112 — One of the best early market melons. Fruits oval, very slightly ribbed, and the hard rind is heavily netted, making it a good shipper and attractive in appearance. The flesh is very thick, sweet, free from stringiness and a rich deep salmon color. The seed cavity is small. Recommended for New England and northern Pennsylvania.

Hale's Best 36 — One of the best early market melons. Fruits nearly spherical, slightly ribbed and have a heavily netted hard rind. The flesh is rich salmon color, thick, sweet, and free from fiber. A popular melon for shipping. Recommended for southern Pennsylvania, Delaware and Maryland.

Hearts of Gold — A very popular mid-season variety for home or market garden use. Fruits are practically round, 6" in diameter, weigh 4 pounds, distinctly ribbed and covered with a fine gray netting. Flesh is very thick, deep pink-salmon, tender and sweet, having a characteristic musky flavor.

Bender's Surprise — One of the most important varieties for home and market gardens, ripening in 95 days. Fruits weigh 7 pounds, oval in shape, 6" by 8", with light green skin turning to a golden tint on ripening and has coarse netting. Flesh is firm, thick, salmon-colored and of good flavor.

Muskmelon Culture

One-half ounce of seed plants 100' of row — 2 to 3 lbs. per acre. For early forcing, start under glass in veneer bands or pots about April 1, develop slowly and transplant after hardening about May 1-15. Plant outdoors May 15 to June 1 either in rows or hills 1" deep. If in rows, make rows 5' apart and thin plants to 12" apart in the row. If in hills, make hills 4 x 6' apart, allowing 3 or 4 plants to the hill.

WATERMELON

Northern Sweet — An early prolific variety for local markets introduced by the Minnesota Agricultural Experiment Station from Siberia. The fruits are small, 8-10 lbs., globular, dark green, striped with medium green. Rind is tough but thin. Flesh deep orange red, medium-grained and stringy when over-ripe. High sugar content. White seeds.

Cole's Early — An early melon of excellent quality, particularly adapted to the home garden. Fruits are exceptionally large for so early a variety, weighing 20 pounds, slightly oval

sweet. It deserves a trial in the areas where adapted as described.

Watermelon Culture

One ounce of seed plants 25 to 30 hills or 200' of row — 2 lbs. per acre. For early forcing start under glass in veneer bands or pots early in April, and about May 15 transplant into field 2' apart in 8' rows. Seed may be sown direct in the field after soil has become warm. Plant 1" deep in hills or rows. If in hills, plant 8 seeds 8' x 8', later gradually thinning to 3 or 4 vines per hill. If in rows, space seeds 1' apart in 8' rows later thinning vines to 2'.



The new **White Mountain** watermelon is an early home garden type that will fit in almost any icebox, and it's got the quality that makes it mighty good on a hot summer's day.

with irregular mottled broad stripes of light and dark green. Flesh is pink-red, crisp and of good flavor. Seeds are black.

Kleckley's Sweet — A second early variety of medium to large size, weighing 30 pounds, oblong in shape and dark green in color. Rind is thin. Flesh is bright red, very sweet, firm, solid and of excellent quality. Seeds are white. Will not stand very rough treatment in shipping, but especially good for local markets and home use.

White Mountain — This is an early small-fruited variety developed by the University of New Hampshire, adapted to many areas formerly considered too cool for watermelon production such as much of central and northern New England and the higher elevations of Pennsylvania. On light soils in central New England, ripe melons have been harvested by August 1, 70 days after planting seed, with continued production until frost. In warmer areas this melon does not do as well. Fruits are about 6" long by 5" in diameter and weigh 3 to 5 pounds. The rind is thin and brittle and will not stand shipping or rough handling. The color is light green with irregular darker stripes. The flesh is medium red, crisp and

ONION

ONION SEED — YELLOW

Ebenezer — Seed of this variety is used extensively in growing sets which when planted the following spring produce an early crop. Early spring planting also gives marketable bulbs the same season. Bulbs are flat but deep, of medium size, dark yellow, very firm, mild, and with a thick skin.

Early Yellow Globe — An early, yellow variety, medium-sized, spherical, firm and solid with tough clinging skins of a deep yellow color. The flavor is mild and the quality and texture good. It is a satisfactory storage onion.

Yellow Globe Danvers — A yellow variety that is a very popular storage onion. Bulbs are medium large, round, firm and solid. The flesh is white with a slight yellow tone.

Utah Valencia — A late yellow-skinned variety that is large and globular. The flesh is white, very mild and of pleasing flavor. A very good strain for winter storage, of the Sweet Spanish type.

ONION SEED — WHITE

Silverskin White Portugal — Grown for white onion sets which produce an early market, white onion. Also used for small pickling onions and good for a late market onion from seed. Bulbs are medium-sized, thick, flat, clear white, hard, fine-grained and of pleasing flavor. It is the most satisfactory white onion for the home garden because of its many uses.

Onion Culture

One-half ounce of seed plants 100' of row — 4 to 5 lbs. per acre. Sow in field from April 1 to May 1, $\frac{1}{2}$ " deep in rows 20" apart. Thin seedlings to stand 4" apart. For producing transplants, sow seed in hotbeds or greenhouses January 15 to February 15, harden off and transplant seedlings to field about April 25.

standard. The root is of medium length (6 to 10"), about $2\frac{1}{2}$ to 3" in diameter at the top, free of side roots with skin smooth and quite white. The edible quality is excellent, being tender and sweet especially after freezing. Requires about 150 days to make full growth.

Parsnip Culture

One-half ounce of seed plants 100' of row — 4 to 6 lbs. per acre. Sow seed in early spring $\frac{1}{2}$ " deep in rows 15" to 18" apart. Thin seedlings to stand 4" apart in row. Seed is very slow to germinate.

Soil should be well prepared and not overbalanced with nitrogen or the plants will tend to grow large tops but small roots.



A variety of peas to fit nearly every purpose, from the high quality varieties for freezing to the large podded kinds for the wholesale market.

PARSLEY

Paramount — A long stem, dark green, moss-curved variety that is frost hardy and slow growing. It develops to full growth in 120 days but can be cut earlier.

Parsley Culture

One-half ounce plants 100' of row — 3 to 4 lbs. per acre. For early summer harvest, plant about April 1 and to winter-over with some protection, such as straw or sash, plant from August 1 to September 1. Sow in soil that is fertile, barely covering the seed in rows 12" apart. With a light seeding, no thinning should be necessary.

PARSNIP

Model — A parsnip of the Hollow Crown type but less hollow below the crown than the

PEAS

WRINKLED

World Record — A good pea for the first early market and for the home garden. Vines are semi-dwarf. Pods average about $3\frac{1}{2}$ " long, are medium green, broad and well filled with peas of good size and color and of good quality for the season.

Thomas Laxton — A second-early semi-dwarf pea of very highest eating quality, being tender and sweet when at proper stage of maturity. It is the premier home-garden variety and is being extensively used for quick freezing. The vines are light green, and productive. While support is not essential it makes harvesting in the home garden much easier. The pods are large, straight, square-ended and tightly filled with from 7 to 9 peas.

Little Marvel — A dwarf pea of exceptional quality for the home garden. Pods are dark green, tightly filled and borne in doubles, therefore very prolific. This variety shells out a high proportion of peas per unit weight of pods.

Laxton's Progress — The largest-podded and most attractive pea of the Laxton group. Vines and pods dark green, peas are large and of high sugar content. Vines short.

Hundredfold — Pods dark green, and well filled with large peas of high sugar content. Due to habit of bearing pods double, this strain of the variety is especially productive.

Gilbo — An early strain in the Stride group with open type dwarf vines somewhat resistant to aphid attack. The pods are dark green, slightly curved with eight or nine large dark green peas. Resistant to fusarium wilt.

Alderman (Dark Telephone) — The best of all tall, late peas for home and market gardens. Pods are plump to round, dark green and well filled. The plant branches and bears profusely over a long, late picking season. The vines must be well supported with tall brush or wire. Wider row spacing is more necessary than for varieties with shorter vines. Resistant to fusarium wilt.

EDIBLE POD

These peas are not shelled before eating but are cooked and eaten, pods and all. For best quality this must be done shortly after the peas begin to form inside the pod. After the peas are fully developed, the pods become papery and tough. When pods are kept picked at this early stage these varieties will yield large quantities of delicious pods over a long picking season. Both are resistant to fusarium wilt.

Dwarf White Sugar (Lancaster county, Penna. Strain) — The pods of this white blossomed variety reach edible maturity at a very early age — about 50 days. The vines are about 30" tall producing prolifically the 2 to $2\frac{1}{2}$ " long edible pods.

Mammoth Melting Sugar — These 4" pods are not ready for eating until about 75 days after planting, when they are broad, occasionally twisted, brittle, succulent, free from parchment and of high sugar content. Vines grow 60" tall and should be supported.

Pea Culture

Sow one pound of seed per 100' of row — 90 to 150 lbs. per acre — on fertile well-drained soil as early in the spring as soil can be worked. Place seeds 1" apart and cover with 1 to 2" of soil. Single rows should be about 3' apart. Some prefer planting twin rows 8 to 12" apart with 40" or more between pairs. Brush or wire can be put between the rows of each pair for support.

Thorough seedbed preparation, high fertility, early planting and weed control are essential for a good crop of peas. Fertilizer must not come in direct contact with the seed. Tall growing varieties must be supported by brush or wire and such supports make harvesting of all varieties easier.



Italian Sweet peppers are distinctive not only in shape, but also in earliness, productivity and flavor.

PEPPERS

SWEET

Early Giant — A sweet pepper of the bullnose type for home and market gardens. Plants are dwarf, upright and very productive. Fruits $4\frac{1}{2}$ " long and $3\frac{1}{2}$ " in diameter, are gently tapered, 3-lobed, of mild flavor, and deep green changing to bright red at maturity.

Italian Sweet — Earlier than some strains of Early Giant. Plants are medium green with medium size leaves. Fruits are conical, nearly straight, 5" to 6" long, $2\frac{1}{2}$ " wide at the shoulder with the stem insertion nearly flat, and borne pendant. Fruits are dark green, maturing to a deep red with a slightly roughened skin which is not glossy. The flesh is medium thick. Flavor is sweet and mild, better than other peppers of similar wall thickness. This variety sets fruit heavily under conditions causing vegetative growth in other varieties.

This variety should find a place in every home garden because of its quality, but it may not meet with favor in some markets because of its long tapering shape.

World Beater — Acceptable seed not available.

California Wonder — An outstanding late variety used principally for market and shipping. Fruits are $4\frac{1}{2}$ " long and 4" in diameter, 4-lobed, chunky, smooth and deep green changing to bright crimson at maturity. The flesh is exceptionally thick.

HOT

Long Red Cayenne — An early hot variety, used largely for pickles, canning and drying. Plants are large and productive. Fruits 5" long, $\frac{3}{4}$ " in diameter, tapering, frequently twisted, deep green changing to brilliant red at maturity and very pungent.

Pepper Culture

One ounce of seed produces about 2000 plants, 5 ozs. required per acre. Sow inside

about March 15, transplant once or twice and finally set in field after danger of frost is over 20" by 30" apart. A moderately fertile soil is desirable.

PUMPKIN

New England Pie — A small, high-quality pie pumpkin, also known as Small Sugar. Fruits are round, flattened at the ends, somewhat ribbed, and weigh 6 to 8 lbs. The skin is smooth, hard and a deep orange color. The flesh is sweet, thick, orange-yellow and of high quality.

Connecticut Field — A field variety grown for stock feed, canning, pie stock and Halloween decorations. Often planted in corn fields. Fruits are large, 15 to 25 lbs., round and flattened at the ends. Surface is hard, smooth, ribbed and deep orange color. The flesh is thick, orange-yellow, sweet but coarse.

Pumpkin Culture

One ounce of seed plants 20 hills — 4 lbs. per acre. Plant after danger of frost, 1" deep in 8' x 8' hills, 5 seeds per hill and thin to 2 or 3 plants per hill.

RADISH

Early Scarlet Globe — The most popular home and market garden radish, very early, consequently suitable for forcing under glass. Roots are oval, bright scarlet with a small to medium top. Flesh is of high quality, crisp and tender.

Sparkler White Tip — The roots of this variety are round, smooth, dull scarlet-red, with the lower $\frac{1}{3}$ of the root white. The flesh is mild, white, crisp and tender. A very attractive radish when bunched for market and when served on the table because of its two-color skin.

White Icicle — The earliest and most extensively used long, white, summer radish. The tops are small. The roots are 5" to 6" long, slender, of uniform thickness and smooth. The flesh is very crisp and mild.

Crimson Giant — A second early with deep crimson globular root, remaining crisp and sweet for a long time as it increases in size, while other varieties become hot and pithy with age. Roots $1-1\frac{1}{2}$ " in diameter with white flesh.

Radish Culture

One ounce of seed plants 100' of row — 12 lbs. per acre. For continuous harvest, sow every 2 weeks from April 1 to September 1 in a fertile and well-prepared seedbed. Sow $\frac{1}{2}$ " deep in rows 12" apart. Uniform planting with seed $\frac{1}{2}$ " apart in the rows should require no thinning.

RUTABAGA

Macomber — This strain was developed by growers in Bristol county, Massachusetts, and is well adapted to the Cape Cod region. Roots are ovate in shape, 5" to 6" in diameter, weighing 4 to 5 lbs., white, but rose-colored on top. Flesh is white, crisp, firm, of delicate flavor and excellent quality. Seed should be planted about July 15 so that most growth is made during cool fall weather.

Long Island Neckless Purple Top — A slightly slower growing variety than Macomber so should be sown correspondingly earlier. Roots are 4" to 6" in diameter, weighing 3 to 4 lbs., yellow but purple on top, obovate in shape. Flesh is yellow, firm, sweet and tender.

Rutabaga Culture

As for all root crops, the seedbed should be deeply prepared and well fertilized. One ounce of seed plants 400' of row — 2 lbs. per acre. Sow $\frac{1}{2}$ " deep in 18" to 24" rows from June 15 to July 10 or just in time to allow maturity before hard freezes. Thin seedlings to 6" to 8". Seed is sometimes broadcast and raked in lightly, using 3 to 4 lbs. per acre. For storage, leave roots in the ground until late fall, then harvest before a hard frost and store in a cool, moist cellar.

A water-soaked browning or blackening of areas in the fleshy root may indicate boron deficiency in the soil. If such a condition is found, consult your county agent or the Eastern States Farmers' Exchange fertilizer department for recommended treatment.

SALSIFY

Mammoth Sandwich Island — An improved variety. Commonly known as "vegetable oyster." Roots are 6" to 8" long, 1" to $1\frac{1}{2}$ " thick, tapering, smooth and dull white. Roots may remain in the field over winter similar to parsnips. Used principally in soup stock.

Salsify Culture

One ounce of seed plants 100' of row — 7 to 8 lbs. per acre. Sow in a fertile soil from April 15 to May 1 in a mellow seedbed. Sow $\frac{1}{2}$ " deep in rows 2' apart. Thin seedlings to 3' apart in the row.

SPINACH

Dark Green Bloomsdale — A fast-growing, dark green, most attractive savoy spinach. The leaves are thick, crumpled and erect, forming a large vase-shaped plant with a spread of 12 to 16". In warm weather with long days it shoots seed stalks within a few days after reaching marketable size so ordinarily it has been used only for the first spring and early fall crops. With seed of the longer standing varieties very limited in supply for 1944 this variety can be used throughout the season by frequent succession, avoiding crowding, and prompt harvest as soon as marketable size is reached.

It is not resistant to yellows (mosaic) and should not be used where that disease is prevalent.

Long Standing Bloomsdale — A second early and main crop variety standing 12-14 days longer than regular Bloomsdale, but not as fast growing. The thick, crumpled, rosette leaves are erect, forming a large plant with a spread of 12" to 16". May be sown from earliest spring planting until midsummer, realizing that all spinach seeds quicker in midsummer. Due to crop failure no seed is available in 1944.

Summer Savoy — Acceptable seed not available.

Virginia Blight Resistant Savoy — A savoy variety resistant to blight for fall cutting. Plants are vigorous and seed rather quickly if planted before August 15 to September 15, depending on location and weather. The rosette leaves are thick, crumpled and erect, forming a large plant with a spread of 12-14". Also may be wintered over where temperatures are not too severe and some protection is available.

Old Dominion — An erect, dark green, slightly crumpled variety particularly adapted to wintering over south of Massachusetts. It is slower growing than Virginia Blight Resistant and stands longer in the spring. For overwintering in southern New England, plant in early September; Pennsylvania, Delaware and Maryland, in late September. Not adapted to spring planting.

Spinach Culture — All Varieties Except New Zealand

One ounce of seed plants 100' of row — 8 to 12 lbs. per acre. Sow seed $\frac{1}{2}$ " deep, 2" to 4" apart in 14" to 18" rows. The seedbed should be well drained, fertile, and finely prepared. Side-dress with nitrogen as needed during the growing season.

New Zealand — Not a true spinach but of similar quality when cooked. Thrives in hot weather when other spinach bolts to seed. Plants are branched, often spreading 3' or 4', and grow to a height of 1-2'. The leaves are thick, dark green and somewhat triangular in form. Only the tender branch tips should be used and frequent cuttings can be made all summer.

Spinach Culture — New Zealand

One-half ounce of seed plants 100' of row —

3 lbs. per acre. Soak seed 48 hours before planting to hasten germination. Sow from May 1 to June 1 for summer use, in hills, 3' x 4' apart, 4 seeds per hill and 1" deep. Seedbed should be well drained and finely prepared.

SQUASH

SUMMER BUSH VARIETIES

Early Prolific Straight Neck — This strain produces medium-sized plants bearing smooth-skinned fruits 10-12" long, uniformly light orange yellow in color with no flecking. Seed cavity about 4" in diameter and the blossom end is rounded to a small scar. This strain sets heavily and produces over a long period.

Long Cocozelle — A second early summer variety with cylindrical smooth, straight fruits, dark green with lighter stripes, which change to deep yellow at maturity. Flesh is firm and greenish-white and the best quality of all varieties of this type. It is very prolific, picking over a long period. Fruit can be picked in various stages of growth from 6" to 20" in length; the larger ones require paring.

Squash Culture — Summer Bush

One ounce plants 50 hills — 3 to 4 lbs. per acre. Plant after danger of frost up to June 15, 1" deep in hills 4' x 4', 6 seeds per hill. Thin to 3 plants per hill.

FALL AND WINTER (TRAILING VINES)

Buttercup — Acceptable seed not available.

Warren's Essex Hybrid — Fruits weigh from 10-20 lbs. 8" to 12" from stem to blossom

end and 12" to 16" in diameter. A flattened, cylindrical turban shape, with a distinct button on the blossom end. Skin is hard, warted and orange-red in color. The flesh is deep orange, thick, dry and sweet. For fall markets.

Des Moines — Also known as Acorn and Table Queen. Fruits are dark green, pointed acorn shape, uniformly-ribbed, smooth, thin-shelled, 4" to 5" in diameter and 6" long. Flesh is light yellow, smooth in texture and sweet. Especially delicious when baked in the half shell for individual servings.

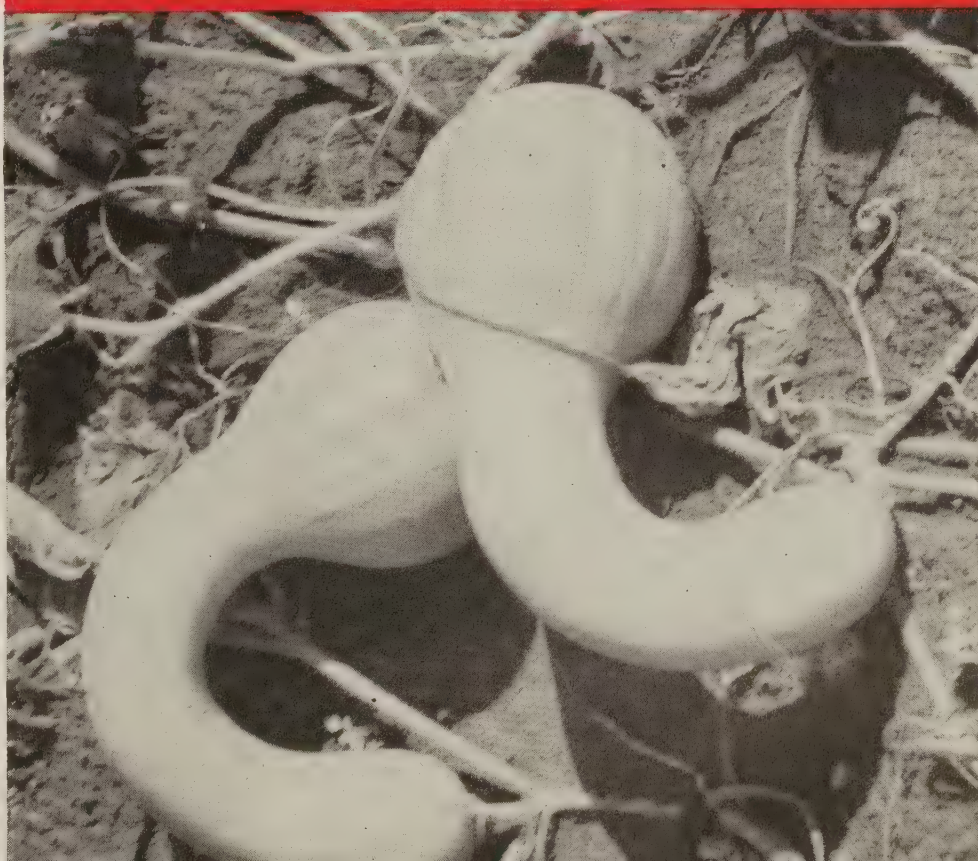
Golden Delicious — Acceptable seed not available.

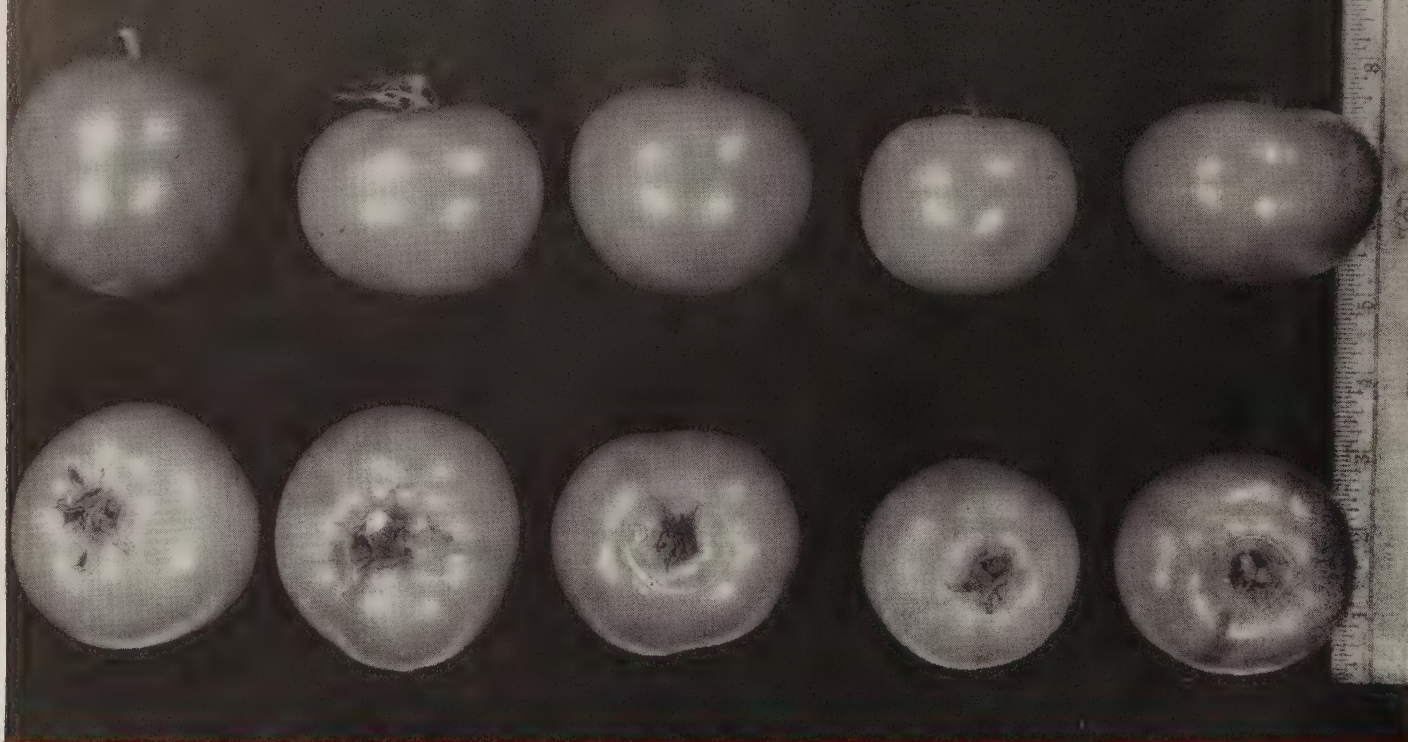
Vermont Hubbard — Acceptable seed not available.

Blue Hubbard — The standard variety for winter storage. Fruits 20" long, 10" in diameter, weighing 15 to 30 lbs. with solid neck and blossom end. The shell is blue, hard, brittle, and medium-warted. Flesh is orange-yellow, thick, medium-dry and sweet.

Golden Cushaw — An exceedingly high quality, productive squash, highly desirable for home gardens, roadside stands and many markets. The fruits are golden russet or light tan in color with long generally curved necks and a bulbous seed end. They average to weigh about 4 to 5 lbs. each. When mature the flesh is a rich orange color, dry and sweet with only a small seed cavity in the bulbous end. The neck is solid. When green the fruits can be used just as the summer bush varieties but with much more flavor. When fully matured and carefully handled and stored they can be kept all winter. Will not cross readily with pumpkins or other squashes.

Golden Cushaw — the dual-purpose squash — is "tops" in flavor, vitamin content and winter-keeping ability.





From left to right: *Marglobe*, *Pritchard*, *Stokesdale*, *Bonny Best*, *Pennheart*. High quality, productive tomatoes for very early, early, midseason and late. *Rutgers* (not shown) is still slightly later.

Culture — Fall and Winter Squashes

One ounce of seed plants 20 hills — 4 lbs. per acre. Plant after danger of frost, 1" deep in 8' by 8' hills, 6 seeds per hill. Thin to 2 or 3 plants per hill. Keep down weeds and control leaf-feeding insects and the stalk borer.

TOMATO

Pennheart — An extra early variety developed by Dr. C. E. Myers of Pennsylvania State College and first grown commercially in 1943. The vine is dwarf or determinate, developing to only about 30" in diameter. The plants should be started medium early and not subjected to any checks in growth before setting in the field. They then produce heavily over a short early period before standard vine varieties yield a commercial picking. Foliage is held well giving considerable protection from sunscald. Fruits are generally smooth, flattened globe in shape, deep red in color, often with a green shoulder, and weigh 5 to 7 ozs.

This variety is intended to be useful only for a first early crop. Close planting — 18" x 30" — produces a heavy yield for the area occupied before the standard vine varieties come into production; and after the early crop is harvested there is still time to produce some quick growing crop on the same land.

Bonny Best (Shirley) — Selected for earliness, vines somewhat susceptible to blight, medium size, fruit protection by foliage fair. Fruits are a flattened globe, 5-6 ozs., smooth, of deep red color, thick-walled, and mature rapidly.

Stokesdale — A highly productive, red-fruited variety in the John Baer season (73 days) and resistant to fusarium wilt. The vine is vigorous and leafy, but it fruits so heavily that some extra nitrogen must usually be sup-

plied about the time the first fruits ripen to retain the foliage. The fruits are of medium size, 5 oz., globular, 5 to 6-celled and medium red.

Pritchard — A second early variety developed by the USDA and noted for disease resistance. Fruits are large, smooth, globular, solid, with thick walls and small seed cavity, scarlet in color and self-topping. A good variety for market and home gardens and for canning. The plant is very prolific and vigorous in growth, affording excellent protection for the fruit from sun scalding.

Marglobe — Developed by the USDA and noted for its high yields and resistance to fusarium wilt. Plant is medium to large and affords good fruit protection. Fruit is medium to large, globe-shaped, bright red, smooth, thick-walled, good quality and borne in clusters of 4 or 5. Used extensively for homes, market and canning.

Rutgers — Developed by the New Jersey Experiment Station from a cross of J.T.D. and Marglobe. The vines are vigorous and rank growing under moist conditions. The fruit is deep scarlet, firm fleshed and of flattened globe shape, larger than Marglobe. For proper growth and fruiting, nitrogen applications must be withheld until after fruit setting; nitrogen can then be applied as a side-dressing.

Tomato Culture

One ounce of seed should produce 3000 plants, enough for $\frac{3}{4}$ acre unpruned or $\frac{1}{2}$ acre staked and pruned. Sow in greenhouse early in March (7 to 9 weeks before planting). Transplant to 2" x 2" or more to avoid crowding. Harden off and transplant to the field after danger of frost, about May 15 or earlier if protected. Set 2' x 4' if to be staked and pruned or 3' to 3 $\frac{1}{2}$ ' x 4' if to be left on the ground.

TURNIP

Purple Top White Milan — An early variety for forcing or field culture. Tops are small and compact with strap leaves. Roots have purple top with white base, grow 3" to 4" in diameter, deep but flat, white-fleshed, sweet and tender. For the early crop sow seed from April 1 to May 1; late crop July 15 to August 1.

Purple Top White Globe — Should be planted in late July to August 1, as it makes its best development in cool fall weather. The root is globular in shape, 3 to 4" in diameter, purple above ground and white below. The flesh is crisp, white, fine-grained, sweet, mild and tender. Tops are dark green, lobed, large and erect.

Amber Globe — A yellow-fleshed variety for fall planting. Later maturing than Purple Top White Globe so should be planted correspondingly earlier. When grown in midsummer, flesh becomes bitter. Roots semi-globular, 5" to 6" in diameter. Flesh pale yellow, fine-grained, tender and sweet.

(Also see Rutabaga varieties.)

Turnip Culture

As for all root crops the seedbed should be deeply prepared and well fertilized. One ounce of seed will plant 300' of row — 2 lbs. per acre. For early crop, seed as early as ground can be prepared, for late crop, in late July or in August or just in time to allow maturity before hard freezes. Sow $\frac{1}{2}$ " deep in 12" to 18" rows. Thin seedlings to 4" to 6". Removals may be used for greens. For late crop, seed is sometimes broadcast and raked in lightly using 2 to 4 lbs. per acre. For storage, leave roots in the ground until late fall, then harvest before a hard frost and store in a cool, moist cellar.



How to Obtain Eastern States Vegetable Seed

☆ **Ordering:** Please submit your order on the vegetable seed order form which is included as a part of this COOPERATOR — additional copies can be obtained from an Eastern States local representative, warehouse, or the West Springfield, Mass., office.

Orders may be submitted through a local representative, or warehouse, or direct to the West Springfield, Mass., office.

Shipment will be made or notice of inability to ship will be sent promptly. Early orders help to assure the varieties desired and delivery well in advance of planting time.

Delivery: Shipment will be made by parcel post or express at our option. Exceptions to this may be made by us; and some orders such as for warehouse stocks may be shipped in Eastern States feed cars. Shipment will be made as promptly after receipt of order as supplies and facilities permit.

Local Warehouse Service: Limited supplies of seed will be maintained at Eastern States regional warehouses and at warehouses of some local representatives for the emergency needs of members at somewhat higher prices. Do not depend on local warehouse service for your basic requirements. Better service can be rendered at less expense when members anticipate their needs and place orders well in advance of desired planting date.

Charges: Prices are subject to change without notice. Prices in effect at the West Springfield office on the postmarked date of your order will apply.

Prices include seed treatment, bags and transportation within Eastern States territory when method of shipment is at our option.

Prices of seed taken from warehouse or representatives' stocks are slightly higher. Catalog prices may be obtained by placing orders in advance, allowing time for direct shipment.

Payment: Cash with the order or C.O.D.

Package Units: Seed is packaged in standard size units as listed only. Unless otherwise authorized we will ship each item in the largest standard size units available and invoice at the rate for its total weight. Orders which specify certain size packages will be invoiced at the rate for those sizes. Varieties cannot be combined to obtain lower prices of larger units.

Mutual Understanding and Exchange Warranty: The Eastern States Farmers' Exchange has exercised all reasonable precautions in the production, preparation and distribution of this seed, but cannot govern the conditions under which the resulting crop is grown. Therefore, upon the acceptance of this seed, it is mutually agreed that the Eastern States Farmers' Exchange gives no warranty, express or implied, concerning the amount, type, quality or conditions of the crop produced and shall in no case be liable for more than the amount actually paid for the seed. Statements of germination, description and other information are

given as the report of our tests, observations, and advice.

It is further mutually agreed by both the member buyer and the Exchange that in case of partial or total crop failure of any crops purchased, planted, or caused to be planted by the Exchange for the purpose of procuring seed,

or in case of damage to, or destruction of any seed of these varieties now on hand or to be delivered through fire, accident or otherwise, the Exchange shall be obliged to deliver proportionate quantities only after reserving an amount of stock seed equal to that used in its plantings.

Vegetables for a Family of Four

8000 square feet = 80' × 100'

	Linear Feet	No. of Plants	Production	Sq. Ft. Required
<i>Perennials</i>				
Asparagus.....	75	50 Crowns	50 lbs.	375
Rhubarb.....	20	6 Hills	60 stalks	80
<i>Greens</i>				
Swiss Chard.....	10	20 plants	10 lbs.	20
Spinach.....	40 (2 crops)	—	25 lbs.	60
New Zealand Spinach.....	15	5 plants	12 lbs.	60
Beets.....	Thinning from crop for roots		15 lbs.	..
Turnip.....	Thinning from crop for roots		10 lbs.	..
Kale.....	15	—	10 lbs.	25
<i>Cole Crops</i>				
Cabbage — Early.....	15	10 plants	30 lbs.	30
Cabbage — Late.....	35	20 plants	80 lbs.	100
Cauliflower.....	50	30 plants	25 heads	125
Broccoli.....	50	25 plants	50 lbs.	150
Chinese Cabbage.....	25	20 plants	20 heads	50
<i>Salad Crops</i>				
Lettuce — Head.....	25	25 plants	20 heads	35
Lettuce — Leaf.....	25 (3 crops)	70 plants	15 lbs.	25
Endive.....	25	25 plants	12 lbs.	40
Parsley.....	10	15 plants	4 lbs.	15
Celery.....	50	100 plants	90 plants	150
<i>Beans and Peas</i>				
Peas.....	300	—	100 lbs.	900
Snap Beans — Bush.....	200	1000 plants	100 lbs.	600
Snap Beans — Pole.....	50	50 plants	60 lbs.	200
Lima Beans — Bush.....	200	600 plants	50 lbs.	600
Lima Beans — Pole.....	50	50 plants	25 lbs.	200
<i>Root, Bulb & Tuber Crops</i>				
Beets — Early.....	25	150 Roots	20 lbs.	35
Beets — Late.....	100	400 Roots	100 lbs.	150
Carrots — Early.....	25	150 Roots	15 lbs.	35
Carrots — Late.....	100	500 Roots	75 lbs.	125
Radish — In rows with other crops				
Rutabaga & Turnip.....	100	200 Roots	100 lbs.	150
Parsnip & Salsify.....	100	300 Roots	80 lbs.	150
Onion.....	100	350 Bulbs	75 lbs.	150
Potatoes.....	400	400 Hills	10 bu.	1000
Corn.....	400	550 Stalks	600 ears	1000
<i>Vine Crops</i>				
Summer Squash.....	25	8 Hills	30 fruits	100
Winter Squash — In corn rows		10 Hills	30 fruits	..
Cucumbers.....	25	6 Hills	25 lbs.	125
Muskmelon.....	70	12 Hills	50 fruits	350
Watermelon.....	30	6 Hills	10 fruits	240
Pumpkins — In corn rows		10 Hills	25 fruits	..
<i>Solanaceous Crops</i>				
Tomatoes.....	150	75 plants	400 lbs.	500
Peppers.....	50	30 plants	150 fruits	125
Eggplants.....	25	12 plants	30 fruits	75

Price List of Eastern States Vegetable Seeds

➔ Order only in units of package sizes listed and calculate the cost of each item at the rate of the largest package size which can be used. Varieties cannot be combined to obtain lower prices of larger units.

Orders which specify a particular size of package will take the rate of that size

Kind and Variety	Days to Grow	Description	Price				
Asparagus Seed — No seed treatment			Packet	4 oz.	1 lb.	5 lbs.	
Mary Washington	3 yrs.	Large, green, rust resistant	.10	.50	1.60	6.40	
Bean — Treated with Spergon			Packet	1 lb.	5 lbs.	25 lbs.	100 lbs.
Bush Green Snap							
Stringless Valentine	48	Round pod, 6½", early	.10	.35	1.25	5.00	18.50
Bountiful	49	Flat pod, 6½", early					
Stringless Green Pod	52	Round pod, 6", 2nd early	.10	.35	1.40	5.50	21.00
Stringless Tendergreen	52	Round pod, 6", 2nd early					
Bush Wax Snap							
Pencil Pod Wax	50	Round curved pod, 6½", black seed	.10	.35	1.40	5.50	21.00
Brittle Wax	52	Round pod, 6", white seed					
Sure Crop Wax	53	Flat pod, 6", black seed					
Bush Shell or Field							
French's Horticultural	85	Carmine splashed, green shell 7"-8"	.10	.35	1.40	5.50	21.00
Lapin Marrow	90	6" pod, white seed, for baking					
Maine Yellow Eye	90	Yellow eye, 4½" pod, semi-runner	.10	.35	1.10	4.50	17.00
Geneva Red Kidney	95	Red kidney, 5" pod, disease res't					
Bush Lima							
Fordhook	75	Large seeded potato type, 5" pod	.20	.45	1.70	6.75	25.50
Pole Lima							
King of Garden	85	Large seeded, 2nd early, 5" pod	.20	.40	1.50	6.00	23.00
Pole Snap							
Kentucky Wonder	65	Green, round pod, 9"	.10	.35	1.40	5.50	21.00
Edible Soybeans							
Giant Green	90	Large seeded, green	.10	.35	1.40	5.50	21.00
Bansei	105	Medium size, yellow					
Willomi	105	Large seeded, yellow					
Aoda	120	Large seeded, green	.10	.35	1.50	6.00	23.00
Beets — Treated with Arasan			Packet	4 oz.	1 lb.	5 lbs.	
Crosby Early Wonder	58	Early Market, oval	.10	.75	2.75	11.00	
Detroit	65	Late market, globe					
Broccoli — Treated with Semesan or Arasan			Packet	½ oz.	4 oz.	1 lb.	5 lbs.
Calabrese	95	Green sprouting	.10	.30	1.25	3.75	15.00
Cabbage — Treated with Semesan or Arasan			Packet	½ oz.	4 oz.	1 lb.	5 lbs.
Golden Acre	70	Round, early, 3-3½ lbs.	.20	.50	2.25	6.95	30.00
Marion Market	80	Oval, yellows res't, 5-7 lbs.					
Penn State Ballhead	110	Round, flat top, 6-7 lbs.					
Wisconsin No. 8	110	Round, flat top, yellows res't, 6-8 lbs.					
Drumhead Savoy	90	Savoy, green flat, 6-7 lbs.	.20				
Chihli (Chinese)	80	Tall celery type	.10	.20	.90		
Carrot — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Chantenay, Red Cored	68	Short, tapering, early	.10	.35	1.30	4.50	17.50
Nantes Long	70	Half long, cylindrical					
Danvers, Red Cored	80	Half long, small top					
Imperator	90	Long, deep red, smooth					
Bunching	90	Long, small top, smooth					
Hutchinson — Field Sta. Strain	100	Long, vigorous, high yielding					
Cauliflower — Treated with Semesan or Arasan			Packet	¼ oz.	1 oz.	4 oz.	1 lb.
Danish Early Snowball	65	Sure-heading, early	.20	.85	2.25	8.00	28.00
Super Snowball	75	Deep head, for midseason					

At Eastern States warehouses order at least seven days before seed is desired in order to obtain catalog prices. Full instructions for ordering and plans for shipment given on page 17. ➔

➔ Order only in units of package sizes listed and calculate the cost of each item at the rate of the largest package size which can be used. Varieties cannot be combined to obtain lower prices of larger units.

Orders which specify a particular size of package will take the rate of that size

Kind and Variety	Days to Grow	Description	Price				
Celery — Treated with Arasan			Packet	1/2 oz.	1 oz.	4 oz.	1 lb.
Green							
Fordhook Emperor.....	125	Short, thick, brittle	.10	.45	.80	2.50	7.5
Tall Fordhook (Summer Pascal).....	130	Tall, full heart					
Chard — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	
Fordhook Giant.....	55	Dark green, moderately savoyed	.10	.25	.75	2.10	
Lucullus.....	55	Yellow green, savoyed					
Corn — Treated with Spergon			Packet	1 lb.	5 lbs.	25 lbs.	100 lbs.
Hybrid, Yellow							
Sugar and Gold.....	74	High quality, yellow and white kernels, susceptible to bacterial wilt	.10	.45	1.80	8.00	30.00
Spancross 13.4.....	77	Fair quality, 4' stalk, 6 1/2" ear					
Early Golden 1.13.....	79	Excellent quality, 5 1/2' stalk, 7" ear					
Marcross 13.6.....	82	5' stalk, 8" ear, 12-14 rows					
Carmelcross 30.13.....	84	5 1/2' stalk, 8" ear, 12-16 rows					
Golden Cross Bantam...	98	Highest quality, 6 1/2' stalk, 8" ear					
Hybrid, White							
Narrowgrain Evergreen 14.13.....	100	High quality, 7 1/2' stalk, 8" ear	.10	.30	1.25	5.50	20.00
Open Pollinated, Yellow							
Golden Bantam.....	90	5 1/2' stalk, 6 1/2" ear, 8 rows					
Bantam Evergreen.....	104	7' stalk, 7 1/2" ear, 14-18 rows					
Cucumber — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Pickling (Black Spine)							
Association Pickling....	54	Small, for sweet pickle	.10	.30	.90	3.00	12.50
Chicago Pickling.....	59	Large, for dill pickle					
Slicing (White Spine)							
Straight 8.....	60	8" x 2", dark green, smooth	.10	.30	.90	3.00	12.50
A & C Special.....	70	10" x 2 1/2", very dark green, smooth					
Eggplant — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	
New Hampshire Hybrid...	66	Oval, large, early	.10	.70	2.50	7.50	
Black Beauty.....	80	Oval, large, midseason					
Endive — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	
Full Heart Batavian.....	90	Broad plain leaf, yellow green	.10	.25	.75	2.10	
Green Curled Ruffec.....	95	Broad cut leaf, bright green					
Kale — Treated with Semesan or Arasan			Packet				
Blue-Scotch.....	56	Dwarf, fine curled, semi-hardy	.10				
Blue-Green Siberian.....	64	Dwarf, hardy, thick leaf					
Lettuce — Treated with Spergon			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Black Seeded Simpson.....	65	Loose leaf — for home gardens	.10	.25	.65	2.10	8.50
White Boston.....	70	Butterhead — for local markets					
New York 12.....	78	Iceberg type — for 1st early crop	.10	.30	.90	3.10	12.00
Imperial 44.....	78	Iceberg type — for rich soils					
Imperial 847.....	80	Iceberg type — for main crop					
Great Lakes.....	83	Semi-Iceberg type — for summer and fall crops	.10	.70	2.25	7.00	30.00
Melon — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Muskmelon — Salmon Flesh							
Emerald Gem.....	85	2-3 lbs., for home garden or market	.10	.30	.90	3.00	12.00
Honey Rock.....	88	4-5 lbs., for home garden or market					
Hale's Best 112.....	90	4-5 lbs., good shipper, use in New England					
Hale's Best 36.....	90	5-5 1/2 lbs., good shipper, use in southern Pennsylvania					
Hearts of Gold.....	94	4-5 lbs., for home garden or market					
Bender's Surprise.....	95	7-8 lbs., for home garden, market or short shipments					

At Eastern States warehouses order at least seven days before seed is desired in order to obtain catalog prices. Full instructions for ordering and plans for shipment given on page 17. ➔

➔ Order only in units of package sizes listed and calculate the cost of each item at the rate of the largest package size which can be used. Varieties cannot be combined to obtain lower prices of larger units.

Orders which specify a particular size of package will take the rate of that size

Kind and Variety	Days to Grow	Description	Price				
Watermelon — Red Flesh, Green Rind			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
White Mountain.....	70	3-5 lbs., for home garden in cool areas	.10	.25	.70	2.00	7.50
Northern Sweet.....	80	8-10 lbs., for local markets, prolific					
Cole's Early.....	85	20 lbs., for home garden, high quality					
Kleckley's Sweet.....	100	30 lbs., for home garden and local markets					
Onion Seed — No treatment			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Yellow							
Early Yellow Globe....	125	Medium size, solid, mild, stores well	.10	.60	2.00	7.00	27.00
Ebenezer.....	133	Deep flat, used largely for sets					
Yellow Globe Danvers..	140	Medium large, round, firm, for storage					
Utah Valencia.....	125	For transplants, large, sweet.....	.10	.70	2.20	8.00	31.00
White							
Silverskin White Portu- gal.....	150	All purpose, dependable, bulbs deep- flat, hard, mild.....	.10	.60	2.00	7.00	27.00
Parsley — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Paramount.....	120	Long stout stem, dark green, triple curled.....	.10	.25	.70	2.00	7.50
Parsnip — Treated with Arasan			Packet	1 lb.	5 lbs.	25 lbs.	100 lbs.
Model.....	150	Medium long, tapered, smooth.....	.10	.20	.60	1.75	6.50
Pea — Treated with Spergon			Packet	1 lb.	5 lbs.	25 lbs.	100 lbs.
Wrinkled Seed		<i>Vine Pod Suggested Use</i>					
World's Record.....	58	34" 4" pointed Early market	.20	.35	1.50	6.25	22.00
Thomas Laxton.....	62	36" 3 3/4" blunt Home garden and freezing					
Laxton's Progress.....	62	18" 4 1/2" pointed Midseason market					
Little Marvel.....	63	20" 3" blunt Home garden					
Hundredfold.....	64	24" 4 1/4" pointed Midseason market					
Gilbo.....	68	26" 5" pointed Late market					
Alderman (Dark Tele- phone).....	72	60" 5" pointed Late market					
Edible Pod							
Dwarf White Sugar....	50	28" 3" narrow, thin	.20	.35	1.50	6.25	22.00
Mammoth Melting Sugar	72	60" 4" broad, fleshy					
Pepper — Treated with Arasan			Packet	1/2 oz.	1 oz.	4 oz.	1 lb.
Sweet							
Early Giant.....	62	Dwarf, short, bullnose fruit	.10	.35	.65	2.10	6.00
Italian Sweet.....	62	Long, pointed, thick flesh					
California Wonder.....	80	Tall, bullnose, thick flesh					
Hot							
Long Red Cayenne....	75	Long, slender, very hot					
Pumpkin — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.		
New England Pie.....	110	6-8 lbs. yellow, round	.10	.20	.55		
Connecticut Field.....	120	15-25 lbs. yellow, flat round					
Radish — Treated with Semesan or Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Early Scarlet Globe....	24	Oval, small top, scarlet, market type	.10	.30	.50	1.50	4.50
Sparkler White Tip.....	26	Round, dull scarlet, 2-color skin					
White Icicle.....	27	5-6", slender, smooth, mild					
Crimson Giant.....	28	Large, globe, crimson.....	.10	.30	.55	1.60	5.00
Rutabaga — Treated with Semesan or Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Macomber.....	80	Root ovate, rose-colored on top, flesh white.....	.10	.25	.60	1.75	6.00
L. I. Neckless Purple Top..	85	Root obovate, purple on top, flesh yel- low.....	.10	.30	.75	2.80	12.00

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Orders which specify a particular size of package will take the rate of that size

Kind and Variety	Days to Grow	Description	Price				
Salsify — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Mammoth Sandwich Island	270	Roots 8'' long, 1'' thick, tapering, smooth, dull white	.10	.30	.90	3.00	12.00
Spinach — Treated with Arasan			Packet	4 oz.	1 lb.	5 lbs.	25 lbs.
Dark Green Bloomsdale	38	Heavy thick leaf, early bolting, sow thin in frequent succession	.10	.30	.80	3.00	11.00
Long Standing Bloomsdale	42	For 2nd early and main crop	.10	.35	1.00	4.00	16.00
Virginia Blight Resistant	38	Fall cutting or overwintering	.10	.30	.80	3.00	11.00
Old Dominion	210	For overwintering, yellows res't	.10	.30	.80	3.00	11.00
New Zealand — No seed treatment			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
	75	Slow growing, long period harvest	.10	.30	.90	3.00	12.00
Squash — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Summer — Bush							
Early Prolific Straight Neck	50	Lemon yellow, smooth	.10	.25	.70	2.00	7.00
Long Cocozelle	55	Striped green, cylindrical					
Fall and Winter — Trailing Vines							
Warren's Essex Hybrid	95	Red turban, 10-20 lbs.	.10	.30	.90	3.00	12.00
Des Moines	100	Green acorn, 3-5 lbs.					
Blue Hubbard	110	Blue warted, 15-30 lbs.					
Golden Cushaw	110	Golden bulbous crookneck, 4-6 lbs.					
Tomato — Treated with Arasan			Packet	½ oz.	1 oz.	4 oz.	1 lb.
Pennheart	60	Dwarf vine, deep red, solid, for first early crop only	.10	.40	.65	2.10	6.00
Bonny Best (Shirley Strain)	68	Flattened globe, deep red, thick walled					
Stokesdale	73	Globular, medium red, vigorous, wilt res't					
Pritchard	75	Large, globular, scarlet, solid, disease res't					
Marglobe	80	Medium to large, globular, bright red, wilt res't					
Rutgers	90	Vigorous, large, flattened globe, deep scarlet, firm					
Turnip — Treated with Semesan or Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Purple Top White Milan	42	Top small, root flat, flesh white	.10	.20	.60	1.80	7.00
Purple Top White Globe	55	Top large, root globular, flesh white					
Amber Globe	60	Top large, root semi-globular, flesh yellow					

Also see Rutabaga

At Eastern States warehouses order at least seven days before seed is desired in order to obtain catalog prices. Full instructions for ordering and plans for shipment given on page 17. ➔

And While You're Growing a Good Garden

BUY WAR BONDS



1944 Vegetable FERTILIZERS

by E. K. Walrath

THIS ARTICLE is limited to the discussion of three problems confronting the vegetable grower.

I. FERTILIZERS AUTHORIZED BY WAR FOOD ADMINISTRATION AND GRADES EASTERN STATES WILL DISTRIBUTE

Only certain mixed fertilizers of the following ratios and minimum grades (or multiples) may be manufactured or distributed for spring 1944. These and the grades selected by Eastern States are given in Tables 1 and 2.

TABLE 1 — NEW ENGLAND

<i>E. S. Grades Spring 1944</i>	<i>Ratio</i>	<i>W.F.A. Minimum Grades</i>
—	0-1-1	0-14-14
—	1-4-2	3-12-6
5-10-5*	1-2-1	5-10-5
8-16-8		
5-10-10		
8-16-16		
8-8-8	1-1-1	7- 7-7
5-17-0	1-x-0	4-16-0
—	5-8-7	5- 8-7
8-12-16**	1-1½-2	5- 7-10
8-12-20**	1-1½-2½	6- 9-15

* Victory Garden Fertilizer for Food Production only.

** Maine only for potatoes. All other grades distributed in all states.

All other grades can be used in all states.

TABLE 2 — MIDDLE ATLANTIC

<i>E. S. Grades Spring 1944</i>	<i>Ratio</i>	<i>W.F.A. Minimum Grades</i>
—	0-1-1	0-12-12
0-24-12	0-2-1	0-14-7
5-17-0	1-X-0	4-16-0
8-8-8	1-1-1	7- 7-7*
5-10-5	1-2-1	5-10-5*
8-16-16	1-2-2	5-10-10
—	1-2-3	4- 8-12
6-18-6	1-3-1	4-12-4
—	1-3-2	4-12-8
5-15-20	1-3-4	3- 9-12
5-20-10	1-4-2	3-12-6
—	1-6-3	2-12-6
—	5-4-3	10- 6-4
—	3-4-3	6- 8-6*
—	1-6-6	2-12-12*

* 5-10-5 is Victory Garden fertilizer — for food production. 7-7-7 can be used in all three states but only for topdressing in Delaware and Maryland. 6-8-6 is for Maryland and Delaware only and 2-12-12 is for Maryland only. All other grades can be used in all states.

The 5-10-5 is the Victory Garden fertilizer for non-farmer patrons. Farmer-members may use it, too, for their home garden or any grades used in their farming operations.

All customary fertilizer materials are authorized for distribution for direct use and for home mixing. Only these fertilizer materials will be listed by the Exchange: Nitrate of

Mr. Walrath, writer of this article, handles Eastern States studies of soils and fertilizer recommendations. The picture at left shows what happened to a few rows of corn that didn't get their "Eastern States" on the farm of D. N. Cairns of Ligonier, Pennsylvania

Soda, Cyanamid, Ammonium Nitrate Superphosphate 20% and Muriate of Potash.

II. CROPS WHICH HAVE PRIORITY FOR FERTILIZER AND HOW MUCH CAN BE USED

Certain vegetables considered most important to the war effort have first call on fertilizer supplies. They are beans, cabbage, carrots, onions, peas, potatoes, sweet corn for processing, tomatoes and vegetables for seed production. Other crops must take what fertilizers are left. To use the supply of fertilizer most effectively, the War Food Administration Order provides that of the grades authorized, the grower may use the amounts customarily used on the farm or in the community or those recommended by the state agricultural experiment stations, provided, however, that the amounts do not exceed maximum rates recommended by state experiment stations.

Such state recommendations for fertilizers have been received from all but one station and copies can be secured from county extension services. There are a few minor variations in recommendations between the several stations but there is a much better correlation between states than previously. Tables 3 and 4 are condensed lists of the amounts and grades of Eastern States fertilizers that meet or approximate the official lists. Most of the state recommendations give a second choice but for brevity and to give the grade that Eastern States is most likely to have for the purpose, only one grade is given in this general list of suggested usages.

If all members raise their usage to these maximum rates regardless of previous practices and thereby make the ceiling the floor, the demand would so exceed the supply that rationing of fertilizer might result. These maximum rates will not necessarily be the most profitable, for they represent the upper limit of amounts considered practical for the less favorable conditions.

In these tabulations it will be noted that for New England the 8-16-8, 5-10-10, and 8-16-16 are the three grades recommended for commercial vegetable production. For Pennsylvania, Delaware and Maryland the 6-18-6 and 5-20-10 must meet most of the fertilizer requirements for general vegetable production with grades higher in potash restricted to production of root crops.

The 5-17-0, which is 20% Superphosphate ammoniated with nitrogen solution, in normal times is used for a starter for row crops. Since usage for Group A vegetables will restrict the amount of fertilizer available for Group B crops, this 5-17-0 will provide a nitrogen-phosphorus fertilizer that may be mixed on the farm with the muriate of potash that will not be delivered to the fertilizer plants in time for mixing and curing. The 5-17-0 may likewise be used to reinforce manure and for grass cover crops.

The 5-10-5 Victory Garden fertilizer should be used at the rate of not more than five pounds per 100 square feet. Apply less if manure is used. Spread evenly and then plow or spade down.

III. HOW TO USE LIMITED SUPPLIES OF POTASH TO SECURE THE GREATEST PRODUCTION

With less potash available for distribution in 1944, fertilizers with lower proportions of potash should be used except where definite needs for higher potash are known to exist. Plants do not utilize potash effectively if either phosphorus or nitrogen are deficient. Fertilizers with higher proportions of phosphorus than the 1-1-1 ratio are therefore recommended for general use. The 8-8-8 mixture is recommended only for leafy crops where there is a high reserve of phosphorus. The use of this grade in Delaware and Maryland is restricted to topdressing use. Vegetables likewise need more potash if soils are overlimed and therefore lime should not be used unless the need is definitely known. If peas and beans, beets, and celery do well, it is not likely that additional lime is needed.

Potash can be made to go further with a deeper placement of fertilizer. When potash is applied near the surface where the soil is alternately wet and dry, much of the potash is changed to an unavailable form. With deeper placement secured by deeper drilling or plowing down part or all of the fertilizer, potash is not so subject to such losses. Since most of the potash and nitrogen in manure is in the liquid portion, much more will be available for crops if every effort is made to conserve these valuable nutrients against leaching losses.

Poultry manure is especially valuable for the production of leafy crops and for topdressing. Recent analysis of fresh manure taken at Westbrook Laboratory, with 70 percent moisture, contained 1.8 percent nitrogen, 1.1 percent available phosphoric acid, and .8 percent potash (K_2O), or approximately a 2-1-1 ratio. Four tons of such poultry manure would furnish the equivalent of 100 pounds of muriate of potash or that contained in 400 pounds of an 8-16-16 mixture. Eighty-five percent of the nitrogen was in the organic, water soluble form. We should consider poultry manure as a dilute organic fertilizer that has much of the nutrients in the soluble form and is, therefore, worthy of more consideration by the vegetable growers both during and after the present war emergency.

TABLE 3

Suggested Grades and Maximum Rates—Bags per Acre

Crops	Maine and New Hampshire	Connecticut, Massachusetts, Rhode Island, Vermont
GROUP "A" VEGETABLES		
Cabbage.....	* 5-10-10 @ 20	* 5-10-10 @ 20
Beans and Peas.....	5-10-10 @ 10	8-16-8 @ 9
Carrots.....	5-10-10 @ 20	8-16-8 @ 9
Onions.....	5-10-10 @ 20	8-16-8 @ 15
Sweet Corn (processing).....	8-16-8 @ 10	8-16-8 @ 8
Tomatoes.....	8-16-8 @ 10	8-16-8 @ 8
Potatoes.....	5-10-10 @ 20	5-10-10 @ 20
	8-12-16** @ 12½	
	8-12-20** @ 10½	
Victory Garden.....	5-10-5 @ 20	5-10-5 @ 20
GROUP "B" VEGETABLES		
Leafy Crops.....	8-16-8 @ 15	8-16-8 @ 12
Root Crops.....	5-10-10 @ 20	5-10-10 @ 15
Other Crops.....	8-16-8 @ 15	8-16-8 @ 9

* With manure reduce the quantity of fertilizer or equivalent amounts of 8-16-16 where 5-10-10 is listed.

** For Maine only.

TABLE 4

Suggested Grades and Maximum Rates—Bags per Acre

Crops	Delaware and Maryland	Pennsylvania *
GROUP "A" VEGETABLES		
Cabbage.....	6-18-6 @ 8	6-18-6 @ 7
Beans and Peas.....	6-18-6 @ 8	6-18-6 @ 6
Carrots, Onions.....	5-15-20 @ 6	8-16-16 @ 8
Onions.....	5-15-20 @ 6	5-20-10 @ 12
Sweet Corn (processing).....	5-20-10 @ 3	5-20-10 @ 5
Tomatoes.....	8-16-16 @ 8	5-20-10 @ 8
Potatoes, Sweet.....	5-15-20 @ 8	—
Potatoes, White, Late.....	8-16-16 @ 8	8-16-16 @ 6
Victory Garden.....	5-10-5 @ 20	5-10-5 @ 20
GROUP "B" VEGETABLES		
Leafy Crops.....	6-18-6 @ 8	6-18-6 @ 7
Root Crops.....	5-20-10 @ 6	8-16-16 @ 8
Vine Crops.....	5-15-20 @ 8	5-20-10 @ 6

* Based on 1942-1943 Recommendations and for use without manure. With manure reduce the quantity of fertilizer.



Let Your Seed Potato Needs Be Known

by C. W. Clemmer

Mr. Clemmer is in charge of Eastern States Seed Service.

EVERYONE knows that seed potatoes must be grown the year preceding their use for table stock production. It is also obvious that to have the varieties in the quantities desired, a suitable acreage of each kind must be planted in the spring of 1944 for use in 1945. It is already estimated that in 1945 Eastern States members will want their cooperative to provide 600 or more carloads of six varieties of seed potatoes, but just how many of each no one knows until everybody concerned helps as best he can in estimating ahead.

During the past several years the supply of Eastern States seed potatoes has been exhausted before the close of November, even though the acreage in its seed production has increased each year. In 1943 the increase in acreage was 30 percent more than the

preceding year, but still, even with the largest yield on record, thousands of farmers will be deprived of Eastern States seed potatoes in 1944 because members did not help their cooperative estimate their needs far enough in advance to grow the kinds and amounts of seed required.

As early as November, 1941, this shortcoming was recognized for the 1942 table stock season and Eastern States directors urged management not to permit it to happen again. So in December, 1942, an allotment plan was presented to all Eastern States representatives, based upon their estimated needs for 1944. Their applications received by February 1, 1943, determined the acreage of seed grown last year and allotments were reserved, according to applications, subject to members' orders received prior to November 30, 1943, for the 1944 spring shipments.

There were three serious limitations to this first allotment plan, all

of which can be overcome in the future by proper exercise of responsibility by the organization, the representatives and the members.

(1) There was not sufficient stock seed of one variety available to plant the necessary acreage to provide the seed required by those representatives who failed to submit their applications. The seed acreage will always be limited to the amount of tuber unit stock available but with adequate advance planning this limitation may be largely overcome.

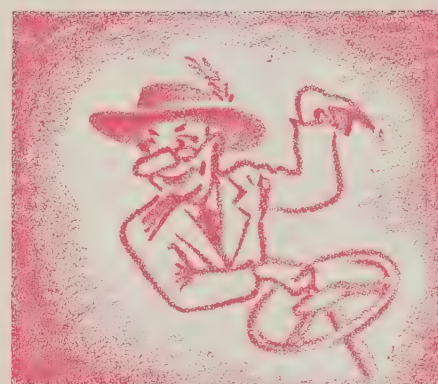
(2) The representatives who submitted applications had previously distributed a little over half our total volume, but those who sent in no applications upset the apple-cart, because their members still expected them to provide Eastern States seed potatoes in 1944. However, their specific needs were unknown, except as past usage would suggest. But, with the increased acreage stimulated by the war effort, such past expe-

rience is quite inadequate. This limitation will be swept aside by 100 percent participation of all representatives in submitting their seed potato applications by February 1, 1944, for 1945 distribution and each year thereafter for the subsequent season.

(3) Very few individual members were even consulted concerning their future plans for potato acreage and seed requirements. In the future representatives will welcome such guidance from members. At their discretion, some representatives will use return postal card forms to members ascertaining their probable seed requirements in 1945. The postal reads as follows:

mating their 1945 requirements by February 1, 1944. The Eastern States Farmers' Exchange will then plant an acreage of each variety, within the limits of available tuber unit stock seed to fulfill these requirements. The seed produced will be allotted to representatives within the available supply according to their applications and reserved until November 30, subject to members' orders. In this manner there should be seed reserved for every member who participates and who cooperates now with his representative.

This program is an outstanding example of a farmers' cooperative purchasing service in which its own



Farmer Gates

"Hop into the truck," said old man Gates. "We'll go to the store of Eastern States. They have greater bargains to save our dough than any other place I know. They seem to be always in the lead in furnishing things that the farmers need, and all their stock is fresh and new and their prices are most attractive, too."

The engine started with a din. The family all tumbled in. As down the hill they quickly sped, who should they see but neighbor Fred. They halted just to say "Hello," and Fred jumped in and said, "I know it's down to Eastern States for you and that is where I'm going, too."

Again they started down the hill and bumped right into neighbor Bill. He hopped aboard and said, "OK. I'm going to Eastern States today." And so it went for mile on mile. Each neighbor stopped them with a smile and climbed upon old Gates's truck and each remarked, "What perfect luck." Across the town sped old man Gates and stopped in front of Eastern States. All clambered out with lightning speed and purchased what they knew they'd need. The pile grew bigger, hour by hour, necessities including flour and bran and oats and rye and wheat that stock upon the farms could eat, and then when all the bills were paid, to fill the truck each lent his aid. They had to use, to load them there a slide rule, compass, plumb and square. When everything was placed aboard they all climbed in, the engine roared, and none remembered such a load had ever passed up Gates's road. Now, that's the way the farmers do; they help themselves and others, too, and thousands more like Mr. Gates appreciate the Eastern States. — *Nathan Marshall Southwick, Leicester, Massachusetts.*

Dear E. S. Member:

January 1944

It is necessary to produce during 1944 Eastern States seed potatoes for planting in 1945. In order that our cooperative organization may know how many acres of each variety to grow this year, I have been asked as the Eastern States local representative to report prior to February 1, 1944, the estimated requirements of members in this area for seed to plant the acreage of potatoes they may grow in 1945. An allotment of seed will then be reserved subject to members' orders prior to November 30, 1944.

I will appreciate your guidance in arriving at the estimated requirements of Eastern States seed potatoes for this area in 1945 by informing me prior to February 1, 1944, of your own probable 1945 seed potato needs by varieties in comparison with your plans for this year's (1944) acreage.

Signed.....
E. S. Local Representative

Dear E. S. Local Representative:

January 1944

I estimate my 1945 Eastern States seed potato requirements in comparison with my 1944 acreage as follows:

Variety	1944 Acres	1945 Acres	Bags Per Acre	Bags Needed In 1945
Cobbler				
Chippewa				
Mountain				
Katahdin				
Russet				
Sebago				

Total

This is not an order.

Signed.....
E. S. Member

Whether a member or patron receives such a postal or not, this will constitute the official appeal to previous Eastern States seed potato users to aid their representatives in esti-

producing members function to complete the cycle of "Cooperative Production for Use," such as does not exist, to our knowledge, anywhere else in America.



EASTERN STATES
Cooperator

THIS MAGAZINE is published monthly by the Eastern States Farmers' Exchange, headquarters: West Springfield, Mass. It is distributed free to members of this cooperative purchasing association. The purpose of the *Eastern States Cooperator* is to keep members informed about the progress of their organization — to help make better farming easier to accomplish by having up-to-date information available regularly. For anyone living outside Eastern States territory and those within the territory but not able to participate in the association's purchasing program, there is a subscription price of \$1.00 a year.

There are 100,000 members and patrons in the Eastern States Farmers' Exchange located in New England, Pennsylvania, Delaware, and Maryland. The members are the owners of the Exchange, which serves as the purchasing department of their farms. They control its operation through their annual meeting which every member has the right to attend. Each member has one vote.

Members elect the Exchange's board of directors at the annual meeting. Through its executive committee, the board of directors carries out its responsibilities to the membership. The management, responsible to the executive committee, selects and purchases the commodities handled by the association.

Eastern States commodities are processed in the Exchange's own plants — shipped in carloads — usually delivered to members from the car door — and paid for on a cash basis; factors that enable the Exchange's local representatives to serve 1000 communities economically.

YOUR HEALTH!

PROPER food goes far to keep the body healthy and the mind alert. Vegetables provide us with a wide variety of the vitamins and minerals necessary for health. It seems logical that the family which has a good vegetable garden is likely to eat plenty of vegetables fresh enough to be in prime condition.

You can't figure the value of your garden entirely in dollars and cents. Just try to put on paper the number of dollars the health of your family is worth to you!

WHY GARDEN?

HOME vegetable gardens may be destined soon to become a much more important and respected project on most farms than they have been for many years.

During the past two decades as farming became more and more mechanized and there was more specializing by farmers, a vegetable garden looked to some farmers as a mere "trifle" — often more nuisance than it was worth. It meant a lot of hard hand work for the men folk who much preferred to pilot a tractor. Then, too, modern automobiles took farmers to town as often as they wanted and the grocery stores carried fresh vegetables all year. Why mess around with your own garden?

The completely specialized farmer must operate on a fairly large scale to earn enough dollars to go out and buy *everything*. That usually involves a lot of hired labor and a big investment in equipment. Successful use of hired labor and expensive equipment requires management skill to match the risks involved. Some farmers end the year having made a place for others to work and earn and made a market for equipment but have little left for themselves. They might be better off to operate the farm more as a "family subsistence" unit.

The family which produces a major part of its own food has gone a long way toward assuring independence.

The opportunity to earn and build up a supply of money has receded as rapidly as taxes have risen.

And as the opportunity to participate in quick frozen food advantages spreads as soon as the war ends, farm families need not depend on the fresh vegetable counters in town. They will have their own year-round supply — of even better quality.

Isn't it logical then for more families to farm so as to provide themselves with living advantages which they can't always buy for money even if they could earn it?

FEED OUTLOOK

DURING a severe feed shortage such as the Northeast has experienced for several months, each farmer should have the choice of either feeding a limited number of livestock so they will produce at maximum efficiency or feed a larger number on a less efficient ration in hopes that greater supplies of feed will eventually become available.

For years it has been a policy of the Eastern States Farmers' Exchange to formulate and manufacture feed that would make the first choice possible. Because of abundant supplies the formulas were actually built to contain some overages of the essential nutrients. These extra nutrients did not penalize the careful feeder, but rather gave him a margin of safety that was cheap insurance in normal times.

As the supplies of ingredients decreased Eastern States gradually reduced the overage in such feed to the point where the extra nutrients were at a minimum. This policy eliminated some waste and appeared to be in the national interest. With careful management and good feeding practice these feeds have maintained satisfactory production.

If the Exchange reduced further the supply of nutrients in each feed, then the entire membership would be forced to maintain herds and flocks on a less efficient basis. By holding feeds at present levels each member has a choice.

Those who wish to keep greater numbers may dilute the standard feeds by

using larger quantities of cereal grains or those feeds made entirely from cereal grains.

Those who desire to reduce numbers and feed those remaining on the farm to the point of maximum efficiency can do so by reducing to where the supply of feed will meet the needs.

For these reasons Eastern States is continuing to keep feeds on the present high nutritional plan, even though a smaller tonnage of standard feeds will be manufactured as the ingredient supply is further reduced.

SEED POTATOES

IN ORDER that Eastern States Farmers' Exchange may better know how many acres of each variety of seed potatoes to grow this year, it is asking every local representative to submit an estimate of his members' 1945 seed potato requirements. This must be done before February 1, 1944, and it is now your duty to report promptly to your representative.

Each year the demand for *Eastern States Seed Potatoes* has increased. As their superior producing ability has been repeated each year, more and more

farmers have asked Eastern States to accept their orders. Year after year the supply has been exhausted during November even though the acreage planted for seed potatoes has gradually been increased.

The seed potatoes you plant in 1945 must be grown this summer and plans for that crop must be made by Eastern States quite soon now. That's why your cooperative asks you to look a year ahead in *your* crop planning. Of course, absolute guarantee that the potatoes members want will be available is not possible — weather and other crop yield factors being what they are. But members' own say-so now can help assure plantings of seed stock that will likely match members' actual needs. This is better than leaving it to mere guessing.

An estimate of 1945 seed potato needs will be required of EVERY representative. Eastern States will then make every attempt to produce as many carloads of each variety as are asked for, and potatoes will be reserved in proportion to each representative's estimate.

Your Eastern States cooperative has been producing seed potatoes for 10 years. It has learned a lot in that time. It puts this information to practical use, and it must be "paying out" on members' farms, judging from the constantly growing demand for Eastern States seed potatoes.

Work with Eastern States for better potato crops. Work with your local representative to be sure of having the seed to make that better crop assured for 1945. *Eastern States Seed Potatoes for 1944 were exhausted weeks ago.* To have reasonable prospect of having *Eastern States Seed Potatoes* for your 1945 crop NOTIFY YOUR REPRESENTATIVE NOW as to the variety and quantity you plan to order.

ANNUAL MEETING

THE Eastern States Annual Meeting is now scheduled for Springfield, Massachusetts, Wednesday, February 23, 1944. The place will be the Hotel Kimball — same as last year.

KENNETH HINSHAW

Editor

WALTER ELLIS

Associate Editor

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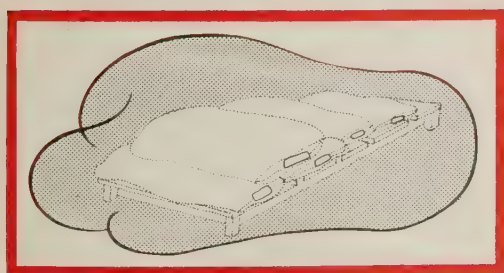
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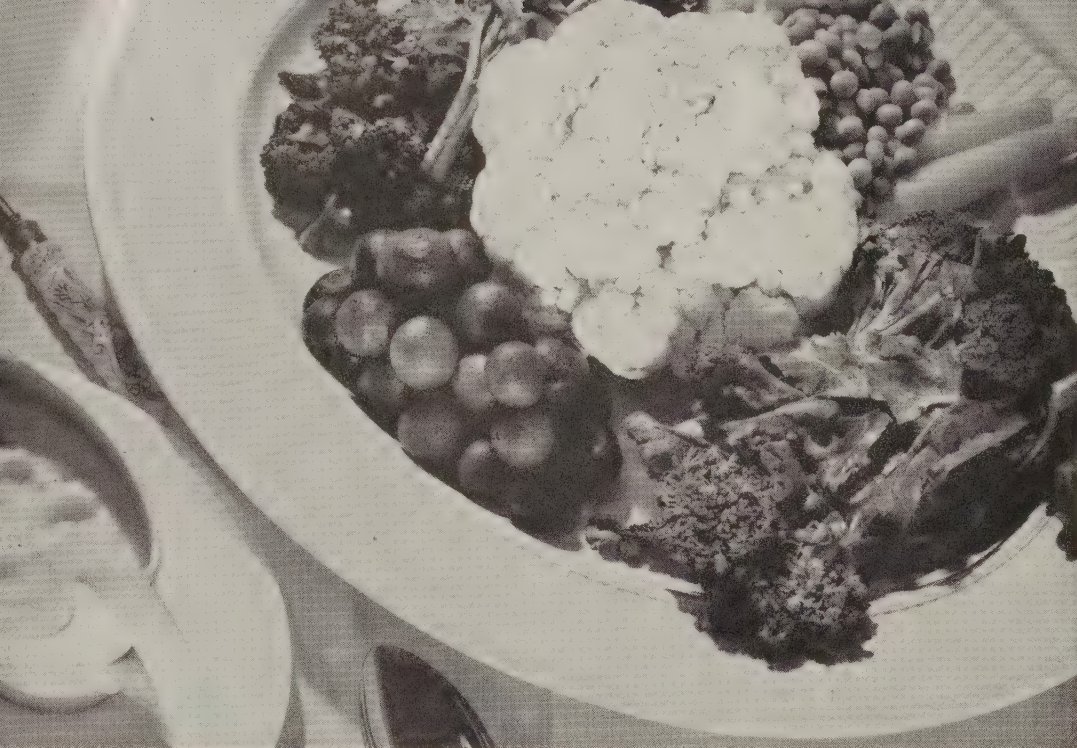


The time may come when
a RESERVE of feed is

**PRICELESS
TO YOU**

BE SAFE . . . KEEP EXTRA
FEED ON HAND

Eastern States Feed Service



Vegetable combinations provide nutritious, body-building food — help to win the war — and save plenty of points, too. The young woman at the right gives the camera a preview of some of 1943 vegetable harvest. She'll be back with a 1944 garden!

HOMEMAKER'S NOTEBOOK

FROM ALL SIGNS, the 1944 garden crop is scheduled for a good bit of thought and planning before it actually gets under way. Even in average times, the home vegetable garden is of economic value — a value that is increased many times over with the nation at war and essential foods none too plentiful for civilian use. Last year's colossal production of home fruits and vegetables demonstrated how well the families of the nation can take care of their own food supply when the need arises. With more demands than ever today on our American "horn of plenty", that need is still more urgent, and home gardens will again rank foremost in the war jobs of the Home Front.

We cannot foresee in much detail what the civilian food supply picture

will look like a few months hence. It can grow much worse, with an ever-increasing demand for food destined overseas. It can grow much worse, that is, unless home vegetable gardens live up to the reputation they made for themselves last year — and surpass it.

The most essential and basic element, that of producing a creditable *quantity* of homegrown fruits and vegetables, seems fairly well assured for 1944. Folks will tend to increase rather than decrease the size of their gardens, in the light of present-day food shortages. Whether they will increase the *quality* of the vegetables they grow is still a question — the answer depending on how far people will go in sacrificing the vegetables they may prefer for those richest in the health-promoting nutrients.



Our country faces a real need for the most efficient food production and preservation possible with its present shortage of man power, transportation, and essential materials. In lands across the sea, the things one likes to eat no longer seem very important — nutrient values receive first consideration. In the face of stark starvation, such lesser considerations as taste preferences go by the board, the underlying essentials stepping out into their place. For America, although the need is not quite so drastic, it is nevertheless much more pressing than it used to be when wide varieties in kind and types of foods were easily available. That is why our home gardens must be tuned to the times this year — we must make sure that our families gain the greatest possible nourishment from the gardenstuffs we grow ourselves.

The Big-Six rates first place on our

garden planning chart. Nutritionists agree that the vegetables below should have primary consideration for home gardens. All contain high percentages of nutrients essential to health and well-being:

- Tomatoes
- Snap Beans
- Carrots
- Cabbage
- Lettuce
- Greens, such as
- Spinach
- Swiss Chard
- Beet greens
- Broccoli

Soybeans, green or dry, belong in every garden, since they have the highest total nutrient content of any vegetable.

Experiments carried out at the University of California* show that gardens can be planned to produce the greatest amount possible of essential foods with limited wartime facilities. Vegetables were listed according to three qualifications. Nutrient value was one consideration — vegetables best in all nutrients and those capable of overcoming dietary deficiencies headed one list. The most productive vegetables headed another, while those requiring the least amount of labor made up a third. A final collection of highly-efficient vegetables was obtained by combining all three groups.

From it we can obtain several more suggestions to add to our list of desirables for the 1944 garden planning chart:

- Potatoes
- Winter Squash
- Beets
- Brussels Sprouts
- Onions
- Turnips

Other vegetables, not particularly desirable according to the rather strict requirements given above, nevertheless, qualify on one score or another and therefore come next on our chart for garden space still available.

- Cauliflower
- Celery
- Asparagus
- Lima Beans
- Peas

And if there is *still* a spot or two, fill in with the following, which, although poor investments according

*Do you want a definition
Of this thing that's called nutrition?
Blended common sense and learning
Prescribe foods for body burning
Which give energy and health
The essence of all human wealth!
Vim and vigor you will find
In the "basic seven", when combined.
Dorothy Altand*

to war-time standards, rate high in enjoyable eating:

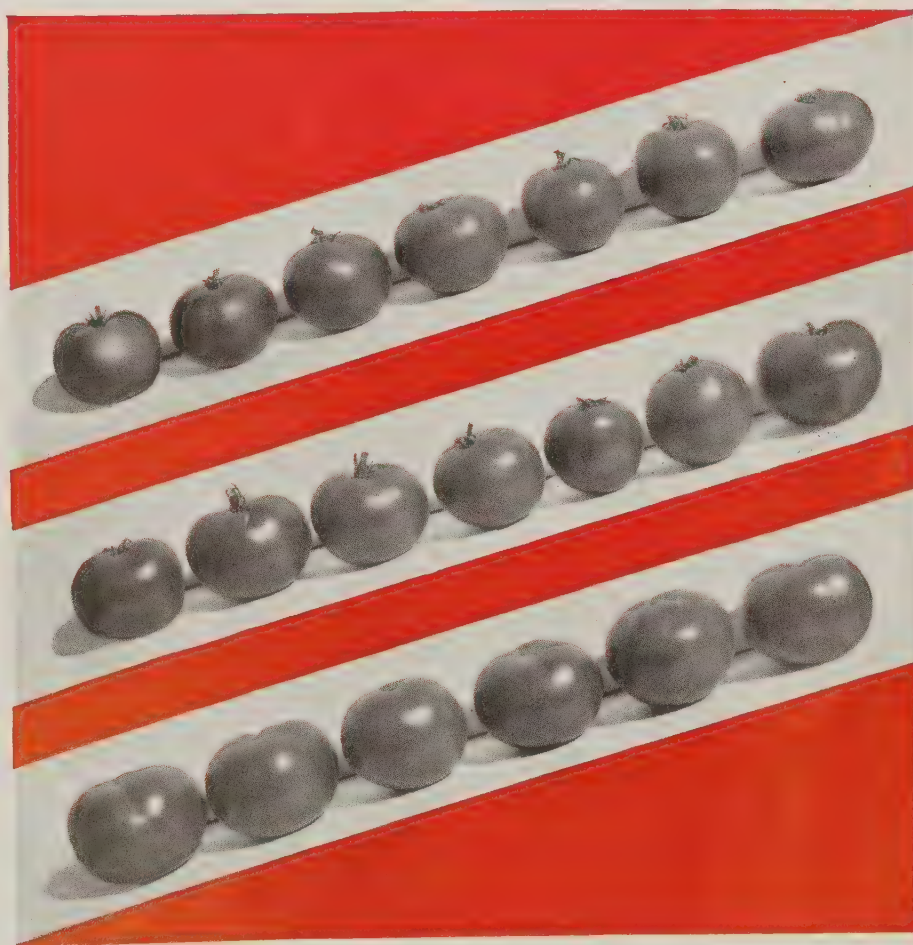
- Peppers
- Cantaloupe
- Cucumbers
- Radish
- Summer Squash
- Sweet Corn
- Watermelon

Recent research done by your Eastern States Seed Service has brought to light some startling new developments which show promise of influencing in great measure our choice of vegetable varieties. This work is still in its infancy, but has already proven beyond a doubt that some varieties are much superior in nutritive value to others. The Golden

Cushaw variety of squash, for instance, may be 11 times as rich in vitamin A as the Blue Hubbard variety, being far superior in its content of this nutrient to any other type of winter squash. The same comparison can be made between varieties of carrots — the Chantenay variety has nearly twice the vitamin A value of the Hutchinson. This study demonstrates the advantage of leaving carrots in the ground until fully mature, for the Vitamin A value of all varieties increases markedly as complete growth is reached.

The possibilities of this type of research are far-reaching. As more evidence is gathered, we may be choosing all our vegetable seed with an eye to the nutrient qualities of its resulting crop as well as its adaptability to our own growing conditions. In the meantime, we can take advantage of the facts now at hand to make more valuable our contribution to the national food supply.

*An Evaluation of California Vegetables. John H. MacGillvary, Agnes Fay Morgan, G. C. Hanna, and Arthur Shultis. College of Agriculture, University of California.



Demonstration Garden Projects Again in 1944

Farm Young People
Should Enroll Now in
Eastern States Event

THE EASTERN STATES *Demonstration Garden* project, established in 1943 to encourage youthful farmers to grow produce for the family table, will be conducted and greatly expanded for 1944.

The success of the 1943 project was far beyond the fondest expectations, 16 gardens having produced a total of approximately 6854 pounds of table and storage food.

The project for 1944 will again be known as Eastern States *Demonstration Gardens*, and is open to any boy or girl aged 12 to 18, inclusive, living on an Eastern States member's farm. The gardens entered in the project may also be used as 4-H and FFA projects, if they are conducted so as to qualify with Eastern States and the other organizations. Eastern States is interested in seeing how much can be grown in a farm garden by youthful workers, not in promoting profit gardens or commodities. It is a constructive program to encourage gardening to provide fresh and storage food for the family.

With present indications pointing toward a larger enrollment in the 1944 project, a group of special awards will be granted, in addition to the 10 top-ranking awards provided in the 1943 competition. During this year, special recognition will be given for the best demonstration garden located in each of the 27 Eastern States field territories. From among all the participants the 10 foremost gardeners will be chosen for all-expense trips to West Springfield.

The measure of each demonstrator's garden will be taken in fresh, canned, pickled, dried, stored, or table-use eatables. There will also be inspection reports from Eastern States staff members, and officials of the 4-H and FFA organizations will be invited to check

these observations. Record forms and diaries must be kept by each entrant and submitted for their information value and for comparison in selecting the *star* gardeners.

The demonstration gardens can be in three units which fit together to make a complete vegetable garden, or can be in one, two or three units as the enrollee may choose. The first unit is the smallest, requiring 500 square feet for early vegetables. Rows may be as short or long as the demonstrator desires, but the arrangement, distance between rows, and succession of planting are to be followed specifically. Each individual may choose any variety of any vegetable he so desires. The second unit requires 1500 square feet, and includes the mid-summer vegetables. The third unit must not be less than 3000 square feet, and involves the production of produce throughout the entire season, including the late-vining vegetables.

The simple rules of the demonstration are:

1. The candidate for growing a *Demonstration Garden* "enlists" with an enrollment pledge secured by writ-

ing to the EASTERN STATES COOPERATOR, West Springfield, Mass.

2. The "enlistment" is an agreement to do the best job the enlistee can in following the garden plan the Exchange prescribes.

3. All supplies of seeds, fertilizer, sprays and dusts used are to be Eastern States, insofar as is possible.

4. The enlistee receives a plan, calendar, guide, record book and diary to be kept in full detail while the garden is being planted, cared for, used or harvested for storage. This is the all-important feature of the *Demonstration Garden* project.

5. The completed record forms are to be mailed to the EASTERN STATES COOPERATOR and the information they contain is to be used in analyzing and reporting the results of the demonstrations.

6. *Demonstration Gardens* are to be subject to inspection during the growing season and authorized representatives of the Exchange will visit the demonstrations and file reports on what they observed.

7. On the basis of what the family was supplied from the garden, what the field inspector reported, and how the records of the project were kept, the Exchange will select 10 star gardeners and bring them, with all expenses paid, to West Springfield for a visit to the Eastern States Plant Industry Project. There'll also be a trip to Westbrook, Eastern States nutritional laboratory, a tour of the headquarters, an award dinner, and plenty of fun and inspiration.



Eight of the 10 star gardeners in the 1943 *Demonstration Garden* project caught by the camera as they toured Westbrook, Eastern States' nutritional laboratory at Ellington, Connecticut.





Dairy farmers of West Hazleton, Pennsylvania, own this milk marketing cooperative. The photograph at the bottom shows the milk bar inside the structure.

Said and Done by

Cooperatives

NEW YEAR'S DAY in 1938 was just another new year to many Americans, but to a group of dairy farmers near Hazleton, Pennsylvania, it marked the beginning of a real cooperative milk marketing undertaking.

At that time, spirits were at a pretty low ebb because the local milk dealer had decided to go out of business, and for a while no one knew quite what to do. Then some enterprising soul called the group together to discuss the idea of buying out the dealer's plant and operating it themselves — perhaps they would run into difficulties in meeting their payroll, but they would at least keep their market.

As with most new ventures, plenty of folks said it wouldn't work — the struggling little cooperative wouldn't last a month. But that first payroll was met, and has been met regularly ever since.

Under the able leadership of General Manager W. T. Spaulding, the organization decided to pioneer in a couple of new ideas of milk marketing which they believed were the coming thing. At the start, they made their undertaking a complete paper con-

tainer operation, which was decidedly in the experimental stage five years ago. Today the paper container business is well established on a national scale and is still growing steadily as producers and consumers alike realize its advantages over the glass bottle. At the same time, the cooperative went on a 100 percent homogenized milk program — and both operations have prospered beyond all expectations.

Plenty of obstacles, such as political pressure against the paper bottle and the competition of other milk dealers, have been put in the path of this courageous group. How successfully they have met their problems is best shown by their production record —

The Farmers Cooperative Dairy now operates six distribution routes and has six collecting trucks working three counties. It has increased production from an initial 1800 quarts a day to an all time-high of 12,000 quarts on July 3, 1943.

With increasing sales and production, distribution costs are decreasing steadily. Best of all, farmer-members are getting more for their milk than the prevailing price in Pennsylvania, while the consumer price has not risen one cent. Once again cooperation has been the answer in mastering a tough problem!



USED BAGS

Price Schedule

Prices effective on EASTERN STATES USED FEED BAGS

Because of a government order from the OPA, the maximum price that can be allowed for Eastern States 10-ounce burlap bags follows:

Size Printed on Bottom of Bag	Price
44.....	11.4¢
46.....	12.0¢
49.....	12.6¢
52.....	13.8¢
54.....	14.4¢
58.....	15.6¢
62.....	16.8¢

Eastern States branded heavy cotton bags —

43.....	12.5¢
45.....	13¢
48.....	13.5¢
51.....	14.5¢

Eastern States branded Osna-burg bags —

43-0.....	13.9¢
45-0.....	14.7¢
48-0.....	15.5¢
51-0.....	17.1¢

Your local representative or regional warehouse will accept your bags and return them to Broder, Burwick, or General Bag & Burlap for you (whichever you choose). You may return as few as 10 or as many bags as you wish through them.

Tag the bundle plainly with the name of your representative (or warehouse) on the front of the tag; put your name on the back, together with the number of bags in the bundle. Get shipping tags from your representative or warehouse. Feed and fertilizer bags may be shipped together.

These are the only authorized Eastern States bag houses:

A. BRODER BAG COMPANY
28-52 Wasson Street, Zone 10
Buffalo, N. Y.

CARL BURWICK & COMPANY
81 Thomas St., Worcester, Mass.

CARL BURWICK & COMPANY
314-324 Grote St., Buffalo, N. Y.

**GENERAL BAG & BURLAP
COMPANY**
1617-25 North Second St.,
Philadelphia, Penn.



☆ **A YEAR AGO** when I was ordering my Eastern States garden seeds I bought a few extra packages of beans, peas, onions, etc., and made up a parcel and sent it across to our friend, Mrs. Young, living now in northern England.

I thought you might be interested in the letter that my wife received from England the other day.

As I remember, the beans, upon which such a glowing report is made, were one of your standard varieties of wax beans — *Alan MacLeod, Beach Hall, Storrs, Connecticut.*

☆ **LETTER FROM ENGLAND** — . . . was so delighted to have your letter and packets of seeds.

About two days after I wrote to you last our house on an island off the south of England was bombed, but mercifully we all escaped with our lives, but of course very shaken. We

managed to have it patched up enough to live in without window-glass or ceilings, etc., and we stuck it out for about six weeks, but "they" came again and again, and Terry (the writer's son) got so nervous having to be thrown down in the road suddenly and laid on, while the "Devils" bombed and machine-gunned us, flying roof-top height with no warning at all, you hadn't time to take cover. However, my husband said I must take Terry inland somewhere and as we had relatives here, we came, and have been here ever since.

I have a little bit of garden here and we had two rows of peas and onions and one row of beans which were lovely. The beans we showed all round the village; nothing had been seen like them before. They were pure yellow. Every one was most interested, as this is a market garden district. — *Elsie Young, Green Farm, Tewkesbury, England.*

☆ **EACH YEAR** at the end of the garden planting season I find quite a few lots of seeds that for some reason or other did not get into the ground (not a unique experience, I imagine). I believe that I have somewhere seen a chart or table telling the length of time different seeds retain their vitality. In these days when seeds are scarce and we are urged to conserve

and save, would it not be well to print in the garden seed number of the COOPERATOR such a table so that the members may know which old seeds to use and which should be discarded? — *Paul Thayer, Fruitland, Carlisle, Pennsylvania.*

Editor's Comment: We did carry such a chart in the January issue of the COOPERATOR for a number of years. It must be realized that any such table is only a general guide to go by and not accurate for any particular lot of seeds. The conditions under which the seed is stored, as well as the initial vitality, can vary the length of time the seeds will grow between very wide limits. Therefore, it was our thought that the space could be used to better advantage for some other purpose. Most any kind of Eastern States vegetable seed, except possibly parsnip, parsley, and salsify, can safely be kept over and used a second year, especially if it is kept in a dry and cool place. However, the only safe way to know for sure regarding the germination and vitality of any lot of seed is to try it shortly before seeding in a germination test. If the lots of seed are small and a germination test is inconvenient, the practical thing to do is to store it in as dry and as cool a place as possible and use first next season.



☆ **SOIL IMPROVEMENT** is really practiced at Critchett Farm, Orleans, Massachusetts. Manager Raymond A. Eldredge grows three crops a year on the same land — one of them potatoes, too!

His system works, as the pictures here show. After harvesting a good

crop of *Cobbler* potatoes, he seeded buckwheat on August 22. By September 26 he was discing in the heavy growth shown. This land was immediately reseeded to wheat and vetch which came along fast enough to make good winter cover. On May 24 that crop was plowed under and



the land was ready for more potatoes — having been enriched and improved by TWO green manure crops.

Now this cannot be duplicated all over Eastern States territory because Orleans is out on Cape Cod with a long, favorable growing season. But it's worth thinking about.



Gee whillikers! We plumb forgot to mention it before, but your Eastern States Information Service was awarded top honors among advertisers in the United States and Canada for the best 1943 direct mail advertising campaign involving use of a house magazine. Naturally, we are thrilled at this recognition for it places your EASTERN STATES COOPERATOR right up front as Number One among private magazines used for special promotional functions. The competition was sponsored by the Direct Mail Advertising Association and big and little businesses of every kind were represented. Picture shows your editor, Kenneth Hinshaw, looking at the award plaque presented to Eastern States last October.

The Editor's Journal

☆ **STIMULATION** to produce better pasture and hay is an added benefit which Paul Coates of Coatesville, Pennsylvania, has received from participation in cooperative activities of Eastern States Farmers' Exchange. Mr. Coates attributes his relatively low feed costs to production of an abundance of high quality feed on his own acres plus judicious use of *Eastern States Supplement* 28%.

With an average of 403.6 pounds of butterfat, the Coates' herd of grade Jerseys led the Avon Grove Cow Testing Association this past year. There was an average of 34.9 cows milking during the test year. While the average Coates' cow produced \$313 worth of milk during the year she called for only \$48.24 worth of purchased grain feed. Value of roughage, including

pasture, raised the total feed cost to only \$101.22 for the year. Feed cost per 100 pounds of milk was \$1.29 and for every dollar of feed consumed \$3.10 worth of milk was produced.

☆ **BAG PRICE CHANGE** — On and after January 31, 1944, the price of all Eastern States branded Osnaburg bags will be reduced to the prices paid for Eastern States branded heavy cotton bags.

☆ **THANKS** — I should be thanking you for accepting this order rather than for you to be thanking me for placing it."

This statement was recently made by a Pennsylvania member of Eastern States Farmers' Exchange to the fieldman and local representative who were on his farm for advance seed and fertilizer orders. He told his two visitors that he was very much

pleased with the money he had made and saved in recent years and attributed his success partly to the type of farm supplies used.

☆ **PLEASE ASSIST** your local representative in making up a carload order of *Eastern States Fertilizer* for shipment in January or February. Members who truck from plants are also urged to take their fertilizer early — in January, if possible. That may seem like rushing the season but with present manpower and transportation problems it is absolutely necessary for the fertilizer plants to stretch their shipping season over more weeks this year. Not only are you *sure* of your fertilizer by accepting delivery earlier than usual, but Eastern States also offers you a financial advantage to do so. See your representative or warehouse for details.

☆ **RESTRICTIONS** on the use of rotenone products (*Eastern States Insect Dust* and *Insect Fungus Dust*) have been liberalized. Representatives and warehouses have details on the variety of uses now permissible.

☆ **PLEASE TELL** your local representative or warehouse **BEFORE** February 1 how many bags of what variety of *Eastern States Seed Potatoes* you will want for planting in 1945. Those potatoes must be grown in 1944 and your Eastern States Cooperative must know now about how many carloads it must grow to meet your 1945 needs.

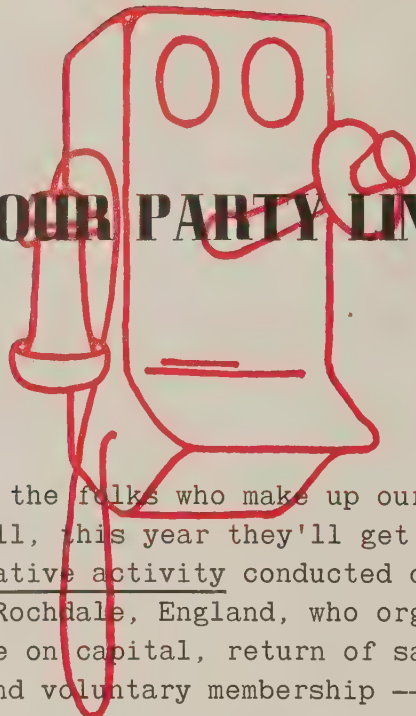
☆ **TO SPEED** returns in some areas, Eastern States has appointed a third authorized bag house. It is the General Bag and Burlap Company, 1617-25 North Second Street, Philadelphia, Pennsylvania. Representatives now have tags to be used in shipping bags to this new house.

☆ **CLOSE** attention to directions will pay well in using *Eastern States Breeder Concentrate Pellets*. Many flocks are now being shifted from a market egg to a breeder basis. *Concentrate Pellets* permit all-year use of *Eastern States Egg Mash*.

Eastern States Turkey-Starter will again be available on cars shipped after February 1.

Listen!

ON OUR PARTY LINE



Many of the folks who make up our cooperatives know very little about their background. Well, this year they'll get a lot of the story. This begins the 100th year of cooperative activity conducted on Rochdale principles. There were 28 weavers in Toad Lane, Rochdale, England, who organized in 1844. The one-member-one-vote, limit of income on capital, return of savings to patrons in proportion to their patronage, open and voluntary membership -- these are the simple, effective policies underlying the Rochdale pattern. Your Eastern States is essentially "Rochdale."

That bill before Congress to require cooperatives (and labor unions) to file income tax reports has been receiving the attention of the National Council of Farmer Cooperatives. Council stand is that filing reports is OK provided they be filed on forms suitably adapted to the non-profit aspects of cooperative business, and also that these reports go to that division of the revenue office which determines tax exempt status of cooperatives.

Best advice this month: Put your order in for Eastern States vegetable seeds NOW. Delay may run into "exhausted" items and mess up your plans and preferences.

Even with Christmas behind us, don't forget to get a copy of that delightful new Eastern States recipe book -- FOOD, AS WE LIKE IT. One of the most satisfactory 50-cent deals you ever made!

Seed potatoes -- will there never be enough? Trouble is it takes two years' planning behind the stock the farmer plants. That's why Eastern States is courageously trying to line up 1945 needs right now. Speak up -- tell your Eastern States local representative what you expect to want. See the story in this issue, page 24.

Looks like we're in for another year of living with a feed shortage. First month sees feed suppliers scrambling for barley and oats lately made harder to buy since the new ceilings were put on them. Corn-hog situation very slightly improved by higher corn ceilings, but still too cock-eyed to assure corn's moving into milk and egg country. New oil meal order may help in equitable distribution of some of the protein items now painfully short in Eastern States operations.

So -- more eastern feed resources depend on grass and gumption than ever. Plan and plant with that in mind.

Subsidy fuss may be settled one way or t'other ere this is printed. More subsidy means another round of marvelous hocus pocus for everybody. Less subsidy isn't all velvet either -- for then we take up with grim reality a lot of the problems we've been sweeping under the national carpet.

HAPPY NEW YEAR just the same!

EASTERN STATES FARMERS' EXCHANGE

VEGETABLE SEED ORDER

to

EASTERN STATES FARMERS' EXCHANGE
WEST SPRINGFIELD, MASSACHUSETTS



SEND PAYMENT WITH ORDER TO AVOID C.O.D. CHARGES

FOR OFFICE USE

Date of Order _____

Paid _____ ☐

Name _____

C.O.D. _____ ☐

RFD or Street _____

Add to Draft _____ ☐

Post-Office _____ State _____

Paid at Whse. _____ ☐

Express or
Freight Office _____ State _____

Whse. to Collect _____ ☐

Order only varieties and sizes as listed in catalogue.

This order form will be returned to you when your order is shipped. If you have occasion to write about this order, you must return this form with your letter.

This order is given and accepted in accordance with conditions printed on the back hereof.

✓	Quantity	Column 1			✓	Quantity	Column 2		
		Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value			Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value
		ASPARAGUS SEED				Brought forward from Column 1			
		BEAN					CARROT		
							CELERY		
							CHARD		
							CORN - SWEET		
		BEET							
		BROCCOLI							
		CABBAGE							
							CUCUMBER		
		CAULIFLOWER							
Total of Column 1					Total of Columns 1 and 2				

✓	Quantity	Column 3			✓	Quantity	Column 4		
		Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value			Indicate Variety Desired When More Than One is Listed in the Catalogue	Unit Price	Value
	Brought forward from Column 2					Brought forward from Column 3			
		EGGPLANT					PEPPER		
		ENDIVE							
							PUMPKIN		
		KALE							
							RADISH		
		LETTUCE							
							RUTABAGA		
		MUSKMELON					SALSIFY		
							SPINACH		
		WATERMELON							
		ONION					SQUASH		
		PARSLEY							
		PARSNIP					TOMATO		
		PEA							
							TURNIP		
	Total of Columns 1, 2 and 3					Total of entire order			

CONDITIONS.

This order is subject to acceptance by the West Springfield office of the Eastern States Farmers' Exchange and after such acceptance is further subject to cancellation or prorating by the Exchange in event of seed crop failures, strikes, fires, embargoes or other contingencies beyond the control of the Exchange. It is further subject to change by the buyer in event of necessary change in his cropping plans upon presentation of satisfactory explanation in writing to the Exchange office in West Springfield and if desired kinds are available.

The member agrees that shipment will be made and accepted under the following condition:

The Eastern States Farmers' Exchange has exercised all reasonable care and precautions in the production, preparation and distribution of this seed, but cannot be responsible for the operation of Nature's laws, nor control the conditions under which it is later stored, handled, planted or grown; so therefore gives no warranty express or implied concerning the description, quality, productiveness or condition of the resulting crop and shall in no case be liable for an amount greater than the amount actually paid for the seed. Statements of germination, description and other information are given as a report of our tests, observations and advice.

Orders cannot be accepted or filled on any other terms.

Send payment with order and avoid C.O.D. Charges

ASSEMBLED BY _____

CHECKED BY _____

DATE SHIPPED _____

**CONFIRMATION WILL NOT BE ISSUED. THIS ORIGINAL
ORDER WILL BE RETURNED TO YOU.**



Control CALENDAR for Vegetable PESTS

THIS CONTROL CALENDAR is a combination of the control calendars from various experiment stations, agricultural colleges and extension services in Eastern States territory.

All Eastern States spray materials are formulated to comply with the WPB orders. For the 1944 season the use of rotenone in five-pound bags is not restricted to specific crops and no certificate is required. The larger sized packages are still subjected to the same restrictions as applied in 1943.

Remember that there are no substitutes for THOROUGH COVERAGE, TIMELINESS, GOOD EQUIPMENT, FIELD SANITATION — these four points must be practiced before any spray or dust can be expected to give effective results. This brief calendar can serve only as a guide; for more specific details relative to spraying or dusting problems consult your state recommendations, your extension agent or write the West Springfield office.

The home gardener can obtain satisfactory control with an Eastern States Hand Duster plus a simple dust program involving all or part of these materials in five-pound bags. Both insects and diseases can be controlled with *Insect-Fungus Dust* (rotenone-copper) or with *N-C-A Dust* (neutral copper and calcium arsenate).

To control insects only, use *Insect Dust* (rotenone). To control disease only, use *N-C Dust* (neutral copper) which can replace Bordeaux Mixture.

APHIDS — *Plants attacked:* bean, cabbage, cauliflower, turnip, radish, broccoli, Brussels sprout, melon, cucumber, squash, eggplant, lettuce, pea, pepper, potato, spinach. *Control:* Spray with *nicotine sulfate*, $\frac{1}{2}$ pint, and two pounds soap in 50 gallons water, or dust with *Insect Dust*, 4% *nicotine lime dust*, *Insect-Fungus Dust*.

BEAN BEETLES — *Plants attacked:* bean. *Control:* Dust with *Insect Dust*, *Insect-Fungus Dust*.

CUTWORM, ARMY WORM — *Plants attacked:* asparagus, cabbage, cauliflower, turnip, radish, broccoli, Brussels sprout, corn, pea, pepper, tomato. *Control:* Dry mix 5 pounds of wheat bran, $\frac{1}{4}$ pound *Paris green*. Dissolve one pint molasses in about 3 quarts of water, add dry mixture and stir vigorously. The bait should be damp but not wet and should be broadcast at dusk, 20 pounds to the acre, before plants are set or just as seed is sprouting.

ASPARAGUS BEETLES — *Plants attacked:* asparagus. *Control:* On cutting beds dust with *Insect Dust*. When cutting season is over spray with *lead arsenate* or *calcium arsenate*, one pound in 50 gallons of water, and add $\frac{1}{4}$ pound *goudac*, or dust with a mixture of 20 parts *lead arsenate* or *calcium arsenate* and 80 parts *spray lime*.

FLEA BEETLE, BLISTER BEETLE — *Plants attacked:* beet, eggplant, pepper, potato, tomato. *Control:* Dust with *Insect Dust*, *Insect-Fungus Dust*. A spray of one pound *calcium arsenate* in *Bordeaux mixture* (2-2-50) is also effective.

WIREWORM — *Plants attacked:* beet, carrot, onion, potato. *Control:* Late fall plowing and frequent cultivation reduce population. On small areas it may be economical to distribute trap baits of potato, and when the worms have been attracted kill them by hand or by soil fumigation with *calcium cyanide*.

GREEN CABBAGE WORM, CABBAGE LOOPER, DIAMOND BACK MOTH, ZEBRA MOTH — *Plants attacked:* cabbage, cauliflower, turnip, radish, broccoli, Brussels sprout. *Control:* Dust with *Insect Dust*.

CABBAGE MAGGOT — *Plants attacked:* cabbage, cauliflower, turnip, radish, broccoli, Brussels sprout. *Control:* Soak soil about roots with *corrosive sublimate*, one ounce in 10 gallons of water, and apply $\frac{1}{2}$ cupful to each plant or dust roots and stems with *calomel gypsum dust* at the time of transplanting and make three heavy applications around stem at weekly intervals.

TARNISHED PLANT BUG — *Plants attacked:* cabbage, cauliflower, turnip, radish, broccoli, Brussels sprout, celery, cucumber, melon, squash, onion, potato. *Control:* Spray with *nicotine sulfate*, one pint, and 3 to 4 pounds of soap in 100 gallons of water, or dust with *Insect Dust*. Make applications 3 or 4 times at weekly intervals.

SWALLOWTAIL CATERPILLAR — *Plants attacked:* celery, parsnip. *Control:* Spray with *calcium arsenate*, one pound in 50 gallons of water, or dust with *N-C-A dust* for both this pest and blight.

EUROPEAN CORN BORER — *Plants attacked:* corn. *Control:* Dust with *Insect Dust*. Apply when borers are hatching and 3 or 4 times at weekly intervals thereafter. Burn or plow under stubble and fodder in fall. Break out and destroy tassels while borers are still in them.

CORN EARWORM — *Plants attacked:* corn. *Control:* Inject *white mineral oil* into tip of husk when silk starts to turn brown or clip off tip of husk and silk when silks start to turn brown. Either treatment must be done after ear has been properly pollinated.

STRIPED, SPOTTED CUCUMBER BEETLES — *Plants attacked:* cucumber, melon, squash, pumpkin. *Control:* 1 lb. *calcium arsenate* in *Bordeaux mixture* (2-2-50).

SQUASH BUG — *Plants attacked:* cucumber, melon, squash, pumpkin. *Control:* Spray with *nicotine sulfate*, one pint in 50 gallons of water. The spray is effective only on very young bugs. Hand pick and destroy adult bugs or place small pieces of board on the ground near the plants to serve as traps, lift boards early in the morning and destroy bugs.

SQUASH VINE BORER — *Plants attacked:* melon, squash, pumpkin. *Control:* Spray with *nicotine sulfate*, one quart in 50 gallons of water. Apply 3 or 4 times at weekly intervals when borers are hatching.

ONION MAGGOT — *Plants attacked:* onion. *Control:* Spray with *Bordeaux mixture* (4-4-50) to which has been added 1 $\frac{1}{2}$ gallons *dormant spray oil*. Apply 3 or 4 times at weekly intervals when flies appear.

ONION THRIP — *Plants attacked:* onion. *Control:* Spray with $\frac{3}{4}$ pint *nicotine sulfate* and 2 pounds soap in 50 gallons water.

CARROT RUST FLY — *Plants attacked:* carrot, parsnip. *Control:* Dust with *Insect Dust*, *Insect-Fungus Dust*. Apply 3 or 4 times at weekly intervals when flies appear.

WEBWORM — *Plants attacked:* beet, parsnip. *Control:* Spray with *calcium arsenate*, 1 $\frac{1}{2}$ pounds, and 1 $\frac{1}{2}$ pounds *spray lime* in 50 gallons water or dust with *N-C-A dust*.

COLORADO, THREE-LINED POTATO BEETLES, FLEA BEETLE, BLISTER BEETLE — *Plants attacked:* potato. *Control:* Spray with *calcium arsenate*, 1 $\frac{1}{2}$ pounds in 50 gallons water, or dust with *N-C-A dust*. The *calcium arsenate* may be combined with *Bordeaux mixture*. Apply when insects appear and repeat as needed.

LEAFHOPPERS — *Plants attacked:* potato. *Control:* Spray with *Bordeaux mixture* (5-5-50). If infestation is heavy, add $\frac{1}{4}$ pint *nicotine sulfate*, or if infestation is light, dust with 20-80 or *N-C dust*.

WHITE GRUB — *Plants attacked:* potato. *Control:* Plow in late fall. Do not plant potatoes following sod if grubs are numerous.

HORNWORM, CORN EARWORM — *Plants attacked:* tomato. *Control:* Spray with *calcium arsenate*, one pound in 50 gallons water. Apply when insect appears. Hand pick on small areas.

COMMON STALK BORER — *Plants attacked:* tomato. *Control:* Remove and destroy all weeds. Split stem with knife and destroy borer.

GARDEN SLUGS — *Plants attacked:* lettuce, potato. *Control:* Use poison bait as for CUTWORM.

GARDEN SPRINGTAIL — *Plants attacked:* beet, spinach. *Control:* Treat same as APHIDS.

SPINACH LEAF MINER — *Plants attacked:* beet, spinach. *Control:* Destroy infested plants or remove infested leaves. Destroy all weeds in the immediate vicinity.

EARLY, LATE BLIGHT (LEAF SPOT), POWDERY MILDEW, SCAB, ANTHRACNOSE, DOWNY MILDEW, FRUIT ROT — *Plants attacked:* tomato, cucumber, melon, squash, pumpkin. *Control:* Spray with *Bordeaux mixture* (2-2-50), *neutral copper fungicide*, 5 pounds in 100 gallons water, or dust with *N-C dust* or a combination insecticide and fungicide. Applications should be made at 10 to 14-day intervals beginning before the disease usually makes its appearance.

POWDERY MILDEW, RUST — *Plants attacked:* pea, asparagus. *Control:* Spray with *wettable sulfur*, 4 to 6 pounds in 100 gallons water, or dust with *dusting sulfur*. On peas wait until mildew appears and repeat as needed. On asparagus make applications three weeks after cutting season at 18-day intervals.

EARLY, LATE BLIGHT (LEAF SPOT), TIP-BURN, CROWN ROT — *Plants attacked:* celery, potatoes, rhubarb. *Control:* Spray with *Bordeaux mixture* (5-5-50), *neutral copper fungicide*, 6 pounds in 100 gallons water, or dust with *N-C dust* or a combination insecticide and fungicide. Applications should be made at 10 to 14-day intervals after plants are well started.

WILT — *Plants attacked:* cucumber, melon, pumpkin, squash. *Control:* Control cucumber beetles and destroy immediately all diseased plants.

SMUT — *Plants attacked:* corn. *Control:* Remove and destroy bolls before they burst. Practice field sanitation.

ASTER YELLOWS — *Plants attacked:* carrot, lettuce. *Control:* Remove and destroy all weeds in the immediate vicinity. Control insects, especially LEAFHOPPERS.

GRAY MOLD FRUIT ROT — *Plants attacked:* eggplant. *Control:* Remove withered blossoms when harvesting fruit.

NECK ROT — *Plants attacked:* onion. *Control:* Control insects. Cut tops close, allowing them to mature completely. Cure well before storing in slatted crates in cool, well-ventilated room.

MOSAIC — *Plants attacked:* pea, potato, tomato. *Control:* Control APHIDS, LEAFHOPPERS, and weeds.

BLOSSOM END ROT — *Plants attacked:* pepper, tomato. *Control:* Avoid dry locations. Maintain as uniform a moisture content as possible.

LEAF ROLL, SPINDLE TUBER — *Plants attacked:* potato. *Control:* Use certified seed. Control APHIDS, LEAFHOPPERS.

DOWNY MILDEW — *Plants attacked:* spinach. *Control:* Avoid excessive watering and when necessary, water in the morning.

FERN LEAF, STREAK — *Plants attacked:* tomato. *Control:* Destroy all weeds in the immediate vicinity. Control insects and isolate from tobacco and potatoes.

PROTECT

Your

FRUIT AND VEGETABLES IN 1944



PROTECTING fruit and vegetables from injury by insects and disease is vital. It is vital to our winning a desperate war and vital to you personally for plain, financial reasons.

You can look with full confidence to Eastern States for your insecticides and fungicides for 1944 crop protection. Your Eastern States serves you as more than just a plain "passer-outer" of materials, because:

- (1) Your Eastern States spray and dust material program is complete for all classes — vegetable growers, fruit growers and potato men.
- (2) Eastern States works closely with state and federal agencies who carry on research work to improve insect and disease control. Eastern States passes on to you promptly benefits from their studies and findings.

- (3) Eastern States is able to keep a close finger on quality control through cooperation of your own fine laboratory and trained chemists at Buffalo.

Through base stocks at both fertilizer plants and current supplies kept at its 60 warehouses, Eastern States is able to give prompt and complete service to home gardeners and commercial producers alike.

Even though produced with the best of seed, soil, fertilizer and tillage, no crop can succeed without timely and thorough treatment for disease and insect control.

Cooperative Farm Supply Services

EASTERN STATES FARMERS' EXCHANGE